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Diplomatic Shock and Awe: Moving, Sometimes Speaking, Islamic Sculptures[1]

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ABSTRACT *This article traces the development of a type of statue found mainly in palaces, those statues which sources both Islamic and Latin record moved and some of them even spoke or uttered sounds. These "living" statues were the finest works of figural sculpture to be produced in the Islamic world in the period from the eighth to the thirteenth centuries, the work of the "jinn" - master craftsmen-engineers, building upon the knowledge of automata primarily derived from translated Greek and Roman texts, Byzantine and possible Chinese examples. The religious justification for these works in Islamic palaces appears to stem from the precedent provided in the Qur'ān concerning the prophet Sulayman b. Da'ud, his palace and his wonder working jinn. It seems these Islamic statues were employed to awe foreign diplomats and envoys, as was also the case with those employed at the Byzantine court, with the power of the ruler, often described in Islamic sources as "the Second Sulaymān" and therefore having the jinn-craftsmen-engineers at his command. It seems probable that depictions of some of these statues are recorded both in surviving manuscript illuminations, including those not directly concerned with automata, and on some of the eight-pointed star tiles from thirteenth century Rum Seljuk palaces in Anatolia. This type of moving, speaking, largely palace sculpture, derived primarily from the caliphal example, offers an explanation for the repeated references in Latin texts to the allegation that Muslims worshipped statues. The fact that these works of Islamic figural sculpture produced for more than 500 years no longer survive should not prevent us from understanding the vast sculptural as well as the technological gulf existing between the Islamic and Latin Christian worlds during this period.*

Keywords: Islamic figural sculpture; Islamic statues; Automata; Robots; Solomon, prophet; Rūm (sultanate)

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Amongst the most important works of figural sculpture that were produced in the Islamic world from perhaps as early as the second/eighth to the seventh/thirteenth-centuries (and later),[2] were life-sized sculptures of humans and other figures that

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[1] This article is dedicated to the young Süleyman Tharaud.

[2] Such as the mechanical sculpture of a lion that mangled a figure wearing European dress at the court of Tipu Sultan in the 1780s: see D. Kinkaid, *British Social Life in India 1608–1937*, 2nd edn (London: Routledge & Kegan Paul, 1973), p. 89; for examples in the Topkapı Palace İstanbul, see, for example, C. Köseoğlu, *The Topkapi Palace: Treasury of the Empire (Emperial Treasury)* (İstanbul: Akbank, 1989),

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seemed to move and speak. These works of art and artifice were therefore, apparently, living statues. Sadly, as is the case with the many wonderful carpets that were woven and embroidered, the naturalistic portraits that were drawn on silk and paper, the many figural wall paintings and the illuminated manuscript paintings made in the 600 years before the end of the seventh/thirteenth century and of whose existence only fragments and the written record provide evidence, these important works of sculpture unfortunately only survive as slight accounts in the written sources and in a few manuals for scientist–engineers. None of these moving statues, not one sculptural automaton from this 600-year-long period of Islamic art, has survived to the present day. These moving statues, often embellished with precious materials and dressed in precious cloth, were as fugitive as the sculptures,[3] figures[4] and figurines,[5] the works of art made by the court and urban sweet makers during this same period. These moving statues were broken up, the jewels extracted, the metals melted down, and the materials employed for other purposes, leaving a vast void in our understanding of Islamic sculpture. It is recorded, however, that sculptural figural automata of a variety of types and sizes were located in palaces, state audience halls and pavilions, as also in some of the audience chambers of some members of the powerful and wealthy urban elite. There is no reason to ignore these works of sculpture, these sculptural automata, for these moving statues were the expression of the highest creative, artistic, engineering and technological skills of the period. They were produced at a time when Western Europeans were carving somewhat crude figural sculptures, largely in wood, stucco and stone that were then painted, such as the second/eighth-century relief carvings in stone and stucco in S. Martino at Cividale in Friuli in Lombard Italy. There are no freestanding life sized sculptures or any record

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(*footnote continued*)
p. 59, for a gilded jeweled elephant on a music box, İnv. No. 3/143; the elephant's trunk and tail move, as do the boats in the scene on the music box beneath, when the automata is engaged and the music box wound. It measures 130 cm high. by 72 cm wide by 80 cm deep. Early Ottoman devices and mechanisms hinting at some continuum of knowledge of the technology employed in seventh/thirteenth-century automata following the Mongol devastations and the plague pandemic include: "in 1421 Sultan Mehmet I's corpse was propped up in a litter and presented to the suspicious troops; the masterstroke was to make the Sultan gravely stroke his beard, while under the litter a cunning official worked the dead man's arms with a concoction of gears and strings" (J. Goodwin, *Lords of the Horizons: A History of the Ottoman Empire* (New York: Henry Holt, 1998), p. 155); while at the end of the century, amongst the property of Şehzade Cem (d. 1495) given to Sultan Beyazit II on Şehzade Cem's burial in Bursa in 904/1499, records Evliya Çelibi, "were an enchanted cup, which became brimful as soon as delivered empty into the cup bearer's hand, a white parrot, a chess playing monkey and some thousands of splendid books" (J. Freely, *Inside the Seraglio: Private Lives of the Sultans of Istanbul* (London: Penguin Books, 2000), p. 33), the "enchanted cup" being a continuation of recorded second- to fourteenth-century examples and of those mentioned in contemporary literature, e.g., in The Tale of the Unending Treasure, 822nd Night, in E. Powys Mathers, trans., *The Book of the Thousand Nights and One Night: Rendered into English from the Literal and Complete French Translation of Dr. J. C. Mardrus*, volumes I–IV (London: Routledge and Kegan Paul, 1996), IV:23.

[3] *Naser-e Khosraw's Book of Travels (Safernama)*, trans. W.M. Thackston Jr. (New York: Persian Heritage Foundation, 1986), p. 57.

[4] The Tale of the Chick Pea Seller's Daughter, 889th Night (Mathers, trans., *The Thousand Nights and One Night*, IV:213) records the making of a life sized sugar doll a portrait of Zainah, dated at the latest to the eighth/fourteenth century.

[5] Shams-i Tabriz in the seventh/thirteenth century records that in Baghdad, "He saw a candy maker who had made little birds of sugar candy" (W.C. Chittick, *Me and Rumi: The Autobiography of Shams-i Tabriz* (Louisville, KY: Fons Vitae, 2004), p. 271).

of moving statues from contemporary Latin states with which comparisons can be drawn—only such works as the Carolingian reliquary statue of St Foy in Conques, or the bronze statuette of Charlemagne from the cathedral treasury at Metz, now in the Louvre, dating from the late fourth/tenth to fifth/eleventh centuries. There is also a reference made by Villard de Honnecourt in his sketchbook of c. 630/1235: "When the deacon read the Gospel, the eagle on which wings the Gospel rests will turn his head to listen",[6] that describes an automata-like device. Yet more than four centuries earlier, at the 'Abbāsid court, sculptures were being made of metal, of life size figures that moved, on occasions spoke, and which were designed to deceive the mind and senses of the onlooker into thinking these statues were alive: a tradition at Islamic courts that continued into the thirteenth-century.

It is regrettable that the moving statues to be mentioned in this article have to date received far greater attention as examples of technology and as elements of the history of the science of mechanics[7] than as the great and wonderful works of sculpture that they undoubtedly were. Most unfortunately these long vanished works of Islamic sculpture are all too frequently consigned to a limbo of science and technology, to the theory and history of mechanics and as rare surviving examples of thirteenth- and fourteenth-century miniature illuminations of scientific subjects by both art historians and historians of science, consequently distorting our understanding of Islamic figural art, of the art of Islamic sculpture, of which these works form both a part and were arguably the finest and certainly the most important examples of all the works of figural sculpture that were produced in the Islamic world between the eighth and the thirteenth centuries.

It is unfortunate for both the historical record and for our present understanding of these sculptures, that the very success of these automata, which were primarily expressions of the ruler's power, in causing amazement, wonder, astonishment and fear, in part relied upon the element of surprise, and they are only rarely mentioned by chroniclers. Many seem to have passed largely unrecorded, except as elements in popular stories such as those in *The Tales of the Thousand Nights and a Night*,[8] which seem in their references to these sculptures largely to confirm other records of them, rather than being the completely fantastic imaginings of ninth-century and later storytellers, which is why they are cited from below.

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[6] G.G. Coulton, *The Fate of Medieval Art in the Renaissance and Reformation* (New York: Harper and Brothers, 1958), p. xiv. Also, "to install a lectern eagle which at the appropriate moment would snap around to attract the eyes of the faithful to the pulpit" (Henry Kraus, *The Living Theatre of Medieval Art* (Bloomington: Indiana University Press, 1967), p. 186).

[7] This article is not concerned with the mechanical engineering qualities incorporated in these sculptures, nor with the relative historical precedence of the invention of important technological aspects of these works of sculpture. For the scientific-technological aspects of these sculptures–automata, see for example: Jack Lindsay, *Blast-Power and Ballistics: Concepts of Force and Energy in the Ancient World* (London: Muller, 1974); A.Y. Hassan and D.R. Hill, *Islamic Technology: An Illustrated History* (Cambridge: Cambridge University Press, 1986); S.H. Nasr, *Islamic Science: An Illustrated Study* (Westerham, UK: World of Islam Festival Publishing Co., 1976); D.R. Hill 1974; as also the numerous articles on this subject by G. Sarton and G. Saliba.

[8] For the early history of the text dating to the early third/ninth century, see R. Irwin, *Night and Horses and the Desert: An Anthology of Classical Arabic Literature* (Cairo: Al-Ahram Centre for Translation and Publishing, 1999), p. 116; Sandra Naddaff, *Arabesque* (Evanston, IL: Northwestern University Press, 1991), pp. 3ff.; R.A. Nicholson, *A Literary History of the Arabs* (New York: Kegan Paul International, 1998), pp. 456–459.

Because these works of sculpture moved, sometimes produced sounds, were dressed, bejewelled, were enamelled, covered in gold leaf and otherwise decorated, they were works of *'ajā'ib*, marvels, designed and made to inspire wonder and awe at the power of the owner, usually the ruler, who had these marvellous, soulless, mobile devices under his command. These works were classed as *'ilm al-ḥiyal*, a term related to ruse or stratagem,[9] which of course they were. They were employed where deception was particularly prized and important, in the treatment of envoys—ambassadors from foreign rulers and other important guests—where the shock and astonishment administered by these wondrous sculptures was worth their weight in gold. Other works of sculptural automata were made to amuse, confound or irritate, still others to record the time, and in some instances they may also have been employed to play a part in religious rites, but only when transferred into a Latin Christian context[10].

These sculptural devices, works of wonder, were continued, modified and further developed in the Islamic world from a knowledge of Hellenistic, later Alexandrian, East Roman (Byzantine) and probably Sāssānid moving statuary, as well as, from the third/ninth century onwards, with perhaps some knowledge of the Chinese examples. Some, including those built by Procopius of Gaza c. 465 (d. 528), who built a water-driven clock automata erected in Gaza, Palestine, that included representations of the 12 Labours of Hercules, signifying the 12 hours of daylight,[11] were certainly known to the Arabs of the sixth to seventh centuries.

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Precedents

Ktesibios of Alexandria (c. 270 BC), an inventive engineer employed by Ptolemy II (308–246 BC), designed accurate water clocks and devised water, air pressure driven and other automata. He was followed by Philon of Byzantium (c. 200 BC), who was his imitator and though of Philon's nine books, comprising "a compendium of technology", the sixth volume on automata has not survived, it is referred to by Heron. The Fifth Book, on Siphons survives, but only in its Arabic translation and Philon influenced both Vitruvius[12] and Heron of Alexandria (c. 62 AD). Heron produced treatises on the automaton theatre "Automata" and on water clocks, building upon Ktesibios of Alexandria's experiments and written works and on Philon's, and in his *pneumatika*, employed steam, water and air pressure, *belopoeika* and *cheirobalistra*. These texts were subsequently repeatedly modified and emended, as they were not regarded as a part of the cannon of unalterable classic texts, and these largely Alexandrian texts formed the bedrock that was mined, modified and developed by later researchers. Both Heron and Philon's related works, dependant in part on those of Ktestibios, had been translated into

[9] Nasr, *Islamic Science*, p. 145. As also to *'ilm al-sīmiyā*, the science of sorcery and works of illusion.
[10] See below n. 52.
[11] *The Oxford Dictionary of Byzantium*, ed. A.P. Kazhdan, volumes I–III (Oxford: Oxford University Press, 1991), p. 947; for the water clock, see Lindsay, *Blast-Power and Ballistics*, pp. 287–292, citing Vitruvius Bk IX, Ch. VIII, 5–8. Frequently, other than the 12 Labours of Hercules, the 12 signs of the Zodiac were depicted.
[12] His book is dedicated to Emperor Augustus 63 BC to 14 AD. He mentions in Bk. X, Ch. VII, 5, "four blackbirds singing by means of waterworks and *angobatae* and figures that drink and move"; he describes the water organ in Bk. X, Ch. VIII, 1–6, and water clocks in Bk. IX, Ch. VIII.

Arabic by the third/ninth century,[13] including the scientific translations and emendations sponsored by the Banū Mūsā, the brothers Muḥammad, Aḥmad and Ḥasan,[14] in third/ninth-century Baghdad, and the variants and developments of these texts written later by al-Sā'ātī in sixth/twelfth-century Damascus and by al-Jazīrī at Diyarbakr at the start of the seventh/thirteenth century.[15]

The colouring and the dressing of moving sculptures in gold jewellery and in actual clothes, gold leaf and jewels was quite simply a continuation under the 'Abbāsids, Ṭulūnids, Fāṭimids, Ayyūbids and other Muslim rulers, as also under the East Romans. The whole tradition of brightly painted sculptures of gods, humans and other figures and animals, carved from wood and stone, fashioned from clay and cast in metal, often with gilded additions, such as wreaths, swords, bows and arrows, was typical of Roman, Hellenistic, Achaemnid, Classical Greek and earlier works of sculpture. Sometimes these statues had jewelled[16] or ivory eyes and silvered teeth. These works of ancient sculpture were both intensely colourful, as recent research has proved beyond any reasonable doubt,[17] and often so realistic that one must have felt one was inhabiting the same physical space as these figures of gods, emperors and otherworldly creatures, and in consequence it is hardly surprising in this context to find tales such as Pygmalion, in which a statue comes to life.[18]

For the Greek-speaking world, Homer described the automata devised by Hephaestius in the Iliad:

> And he (Hephaestius) had set golden wheels underneath the bases of each one (tripods) *so that of their own motion* they could wheel into the immortal gathering, *and return to his house, a wonder to look at*. These were so far finished, but the elaborate ear handles were not yet on. He was forging these, and beating the chains out. As he was at work on this *in his craftsmanship and his cunning*... And in support of (Hephaistos) their master *moved his attendants. These are golden, and in appearance like living young women*,[19]

providing an indication of the very early date of some sculptural automata. Pausanius, amongst others, records some of the earliest painted and dressed wooden statues[20] and the sixth-century BC Periclean East frieze of the Parthenon in Athens records the procession for the annual re-dressing with a newly woven

[13] Hassan and Hill, *Islamic Technology*, p. 60.

[14] H. Kennedy, *The Court of the Caliphs: The Rise and Fall of Islam's Greatest Dynasty* (London: Weidenfeld & Nicolson, 2004), pp. 254–255.

[15] Lindsay, *Blast-Power and Ballistics*, pp. 313–347; Gervase Mathew, *Byzantine Aesthetics* (London: Murray, 1963), p. 27. Nasr, *Islamic Science*, p. 147, n. 29, records that Ibn al-'Arabī (560–637/1165–1240) in his *Al-futūḥāt al-makkiya* describes a dream related to the Alexandrian school of automata, of the device whereby the doors of a temple open apparently of their own accord.

[16] As with the jewels in the eyes of the colossal gold statue of Apollo made by Bryaxis at Antioch.

[17] See for example, *Renkli Tanrılar, Istanbul Arkeoloji Müzesi: Antik Heykel Sanatında Çokrenklilik*, ed. V. Brinkmann and R. Wünsche (2006).

[18] Perhaps also for the same reasons in the Tale of the Fisherman and the Jinn (7th Night), with its half marble-half human young man (Mathers, trans., *The Thousand Nights and One Night*), IV:41–42.

[19] Iliad Bk. 18, vv. 375ff, 417–418. Also Apollo seems to have made one that may have moved, "But he of the silver bow, Apollo, fashioned an image in the likeness of Aineias himself and in armour like him, and all about this image brilliant Achaians and Trojans hewed at each other" (Iliad Bk. 5, v. 449).

[20] See also Iliad Bk. 6, vv. 285–310, for the dressing of the statue of Athena at Troy.

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peplos of the ancient wooden cult statue of Athena,[21] kept on the acropolis in the Erechtheion. This statue, which may have dated from the Mycenean period, and Themistius in the fourth century, indicate that cult statues were stripped bare (of their clothing) for the wonder of the cult initiates.[22] The vibrantly painted sculptures and reliefs of Egypt, of Persia, such as in the Achaemnid glazed tile-work reliefs of the "immortals", bodyguards of the Great King at the Palace at Susa, those in Central Asia and Northern India, in China, as in Greece, Asia Minor, North Africa and Italy and elsewhere, were an accepted part of civilisation. Bronze statues were also coloured,[23] as well as inlaid with metals and glass and often gilded.

It was the lifelikeness of the paintwork on the myriad works of sculpture that surrounded the Early Christian community, the painted statues of the Roman emperors and their gods, as lifelike as the wax death-mask-images of members of patrician Roman families, or as the encaustic portraits of the deceased from Fayyum in Egypt, as well as the ability of some of these statues to move head, limbs, hands and attributes and at times to speak, that caused the waves of vandalism, of statue smashing by Christian fanatics, that swept over the East Roman Empire in the centuries after Constantine's conversion to Christianity.[24]

Homer did not invent the idea of the automata deployed by Hephaestius. Automata were already known to exist or were reported upon in the region of the Mediterranean Sea, from Egypt, Mesopotamia and from further east. Some ancient colourful statues were at the same time automata; they moved, not only in the minds of the recently converted but in fact, such as the statue of the bronze naked Apollo at Didyma cast by Kanachos (c. 500 B.C.) with a bow in his left hand and a stag in his right - the stag "which could be moved by an artful mechanism",[25] while the temple statue of Arsinoe, sister-wife of Ptolemaios II (308-246 BC) carried a rhyton, designed by Ktesibios, having the form of the god Bes, which gave out a shrill note as the spout was opened to pour wine for the celebrants at the temple.[26] Heron of Alexandria advised on making moving statues, together with

[21] R. Ling, "The sculptures of the Parthenon", in *Making Classical Art: Process and Practice*, ed. R. Ling (Stroud, UK: Tempus, 2000), pp. 124–140, here at 129–132.

[22] R. Lane-Fox, *Pagans and Christians in the Mediterranean World from the Second Century AD to the Conversion of Constantine* (London: Viking, 1986), p. 154. The deliberate theft of the cult statue of Artemis's wardrobe of clothes from Ephesus, clearly indicating the dressing of this cult statue.

[23] Hermann Born, "Patinated and painted bronzes: exotic technique or ancient tradition", in *Small Bronze Sculpture from the Ancient World*, ed. Marion True and Jerry Podany (Malibu, CA: Getty Museum, 1990), pp. 179–196. See also W.A. Oddy et al., "The gilding of bronze sculpture in the Classical World", in *ibid.*, pp. 103–121.

[24] Lane-Fox, *Pagans and Christians*, p. 673. "Eusebius tells how his agents broke up divine statues and exhibited their stuffing as mere rubbish" and presumably this "stuffing" included internal rods, speaking tubes and other component parts essential for the movement of these statues or their parts and for them to speak. For the Imperial legislation encouraging the destruction of pagan shrines, see S. Mitchell, *Anatolia: Land, Men and Gods in Asia Minor*, Vol. II, *The Rise of the Church* (New York: Oxford University Press, 1995), p. 67, n. 83.

[25] Lane-Fox, *Pagans and Christians*, p. 181. This bronze moving statue automata was removed to Susa by the Persians in 494 BC, but it was returned to Didyma by Alexander's General Seleucus and it remained on view by the altar for the next 500 years. It also seems that Apollo's priestess at Didyma, to present her oracular statements on behalf of Apollo, sat upon a mechanically revolving cylindrical block surrounded by water in an underground cave at Didyma (ibid, p. 183).

[26] Lindsay, *Blast-Power and Ballistics*, p. 293.

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speaking statues.[27] Water was transformed through the underground pipe-work into wine at the temple of Dionysus at Corinth,[28] and in some of Heron's drinking vessel designs, water was poured in and wine poured out.[29] Doors of temples apparently swung open and the temple trumpets sounded of their own volition to reveal the cult statue, amongst other eye and mind bedazzling phenomena. As Apuleius in the second century AD records when confronted with these wonders,

> I would tell if it were lawful . . . I trod the confines of death and the threshold of Proserpine. I was swept round all the elements and returned. I beheld the sun at midnight shining with purest radiance, gods of heaven and gods of hell! I saw you face to face and adored in (your) presence.[30]

Such was the impact on a man's senses when face to face with these lifelike images, which were understood to have been inhabited at times by the gods they represented—this in part because some moved and spoke.

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The prophet Sulaymān ibn Dā'ūd and craftsmen *jinn*

There is a clear precedent given for the making of wondrous statues in the Qur'ān (Q 34:13), where the *jinn* make statues, amongst other items, including vast cauldrons, "basins like wells and boilers built into the ground", at the command of the prophet Sulaymān b. Dā'ūd (Solomon son of David).[31] Evidently, as

[27] Lane-Fox, *Pagans and Christians*, p. 135, concerning a re-modeled head of Epicurus, designed to distort sound.
[28] Lane-Fox, *Pagans and Christians*, p. 136.
[29] Lindsay, *Blast-Power and Ballistics*, p. 328.
[30] Apuleius Metam. xi cc. 11, 24, cited in H.B. Workman, *Persecution in the Early Church* (London: Epworth Press, 1923), p. 161.
[31] As in the Bible (1 Kings 6:23–30): "And within the oracle he made two cherubims of olive tree, each ten cubits high. And five cubits was the one wing of the cherub, and five cubits the other wing of the cherub; from the uttermost part of the one wing to the uttermost part of the other were ten cubits. And the other cherub was ten cubits; both the cherubims were of one measurement and one size. The height of the one cherub was ten cubits, and so was it of the other cherub. And he set the cherubims within the inner house: and they stretched forth the wings of the cherubims, so that the wing of the one touched the one wall, and the wing of the other cherub touched the other wall; and their wings touched one another in the midst of the house. And he overlaid the cherubims with gold. And he carved all the walls of the house round about with carved figures of cherubims and palm trees and open flowers within and without". The jinn indicated in this context by the skills of the man sent by King Hiram of Tyre, "A widow's son of the tribe of Naphtalia, and his father was a man of Tyre, a worker in brass: and he was filled with wisdom, and understanding, and cunning to work all works in brass. And he came to King Solomon, and wrought all his work", including, of brass: pillars, nets of checker-work and chain-work, capitals of lily and 400 pomegranates, two cast bowls on the pillars, a cast bowl containing "a molten sea" that was 10 cubits across and of 30 cubits circumference, supported by 12 cast oxen and cast bases of lions, oxen and cherubims, and gold items for the temple its fixtures and fittings including hinges for the door, and also items of silver (1 Kings 7:14–51; also 2 Chronicles 3:5–4:22, including "palm trees and chains" (3:5). This cunning man was skilled in working *gold, silver, brass, iron, stone and timber, "in purple, in blue, and in fine linen, and in crimson; as also to grave any manner of graving, and to find out every device which shall be put to him*, with thy cunning men and with the cunning men of my lord David thy father" (2 Chronicles 2:13–14). Hence the association made of skilful and cunning craftsmen with the jinn, who were under the prophet Solomon's command.

marvellous, mobile, coloured sculptural automata—moving life size sculptures of human figures dressed and bejewelled, some mounted on horseback, on horses that moved, sculptures of birds, lions, and other wondrous creatures, making sounds, roaring, the smaller birds singing, the leaves rustling and the sculpted tree swaying—they were regarded at Islamic courts as the work of the jinn,[32] who were under the prophet Solomon/Sulaymān's command, "And (We gave him) certain of the jinn who worked before him by permission of his Lord".[33]

Islamic tradition relates that Solomon killed the King of Sidon and took his daughter Jarada as wife and that she professed her belief in the "One True God". Solomon loved her but she suffered inconsolable grief for her dead father,

> So Solomon ordered the satans (jinn) *to fashion an image of her father and dress it in his clothes*. Jarada and her servants went and worshipped this image every morning and evening, as was customary in her father's kingdom. When his vizier Assaf reported this, Solomon ordered the idol destroyed and he punished the woman.[34]

This passage clearly defines the prophet Sulaymān/Solomon's distinction between a portrait statue representing the deceased King of Sidon, a statue that was dressed in the former king's clothes, made by the jinn to the prophet's own order as a consolation for his grief-stricken wife, and the subsequent destruction of this statue that he had ordered to be made, when, and only when, it was reported by a trustworthy man to have become an object of worship, to have become an idol, the object of idolatry. The change from a portrait statue, an acceptable object made at the prophet Sulaymān's specific command, to an idol that was destroyed by the prophet himself, hinged around the worship that was given to it.[35] It was

[32] Jinn are made of fire, neither angel nor corporeal but include elements of both, luminous and dark. Solomon controlled four armies, composed of jinn, men, animals and birds (Q 27:17).

[33] Q 34:12.

[34] F.E. Peters, *A Reader on Classical Islam* (Princeton: Princeton University Press, 1994), pp. 26–27, citing Zamakshari's (d. 1143) commentary on the Qur'ān, *Al-kashshāf*, on Q 38:34.

[35] Idolatry is stated in the Qur'ān to be the one sin that the Almighty will not forgive (Q 4:116; "Idolatry is worse than carnage" (Q 2:191–194); cf. Q 46:5; 16:20–21, 73; 7:190–200. Following the precedent set by the Prophet Muḥammad, idols as such, objects of idolatrous worship, were destroyed by Muslim rulers, for example, the Ghaznavid Yamīn al-Dawla Maḥmūd destroyed Hindu temples in India, including the temple of Somanath in Saurastra on the west coast of India in 416/1026, (P.K. Hitti, *History of the Arabs* (1991), p. 464, but human figural sculpture in the round, in bronze, stucco and marble was a feature of both Maḥmūd and Mu'sud's palaces at Ghazna (see C.E. Bosworth, *The Ghaznavids: Their Empire in Afghanistan and Eastern Iran 994–1040* (Beirut: Khayats, 1973), pp. 135–136, 140), clearly indicating the distinction drawn by these rulers between idol and statue, as also the sending of the gold idol to Mecca, where it obviously ceased to be an idol and rather was seen as a proof of victory over idolatry and evidence of the Sultan's waging of jihād. Maḥmūd's Sunnī religious faith is unquestioned in the sources. He dispatched to Mecca each year two copies of the Qur'ān written by him (see T.W. Arnold, *Painting in Islam: A Study of the Place of Pictorial Art in Muslim Culture* (New York: Dover, 1965), p. 1, n. 2), as well as being a famous warrior for the faith who employed noted religious scholars at his court (cf., Bosworth, *The Ghaznavids*, pp. 51–54, 129–130). Likewise the Mamlūk Sultan al-Ẓāhir Baybars, who smashed an idol in the Crusader citadel of Safad in 664–665/1266–1267 (C. Hillenbrand, *The Crusades: Islamic Perspectives* (Edinburgh: Edinburgh University Press, 1999), p. 308; as also Zahīr al-Dīn Bābur in the sixteenth century, who ordered the destruction of idols at Urwa (Ẓāhir al-Dīn Bābur Padshah Ghazi, *Barbur-nama* (*Memoirs of Barbur*), trans. A.S. Beveridge (Delhi: Munshiram Manoharlal, 1990), p. 612), yet had a considerable interest in paintings and portraiture. For a seventh/thirteenth-century view of idolatry, see A.J. Arberry,

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therefore evident that there was nothing wrong with making lifelike statues, moving or otherwise, in a palace, or with statues wearing clothes in a palace; what was wrong in the eyes of the prophet Sulaymān was the worship of them.

The relationship between the prophet Sulaymān and deliberately formulated perceptions of the ruler in the Islamic world as the "Second Sulaymān" are evident both in literary works[36] and in surviving palace structures and works of art from palaces.[37] Every detail of the palace was central: its contents and gardens of dwarf palm trees, captive lions, menagerie, relics, pools of mercury, or of water lined with tin or silver, buildings veiled with carved and painted stucco, *ablaq* work, ceramic revetments, wall paintings, portrait reliefs, cauldrons[38] and moving–speaking sculptures. These were all a demonstration of the ruler's power over the *jinn* of the temporal world, the skilled craftsmen and engineers who worked for the ruler, caliph, sultan or emir, who worked for the "Second Sulayman".

The use made of the example provided by the prophet Sulayman was in part, perhaps, a consequence of the longstanding struggle to demonstrate the legitimacy

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(*footnote continued*)
Discourses of Rumi (1977), p. 89: "The Na'ib said: Before this, the unbelievers used to worship and bow down to idols. We are doing the selfsame thing in the present time. We go and bow down and wait upon the Mongols, and yet we consider ourselves Muslims. We have so many other idols in our hearts too. . .". Jalāl al-Dīn Rūmī makes only two passing references in his *Mathnavi* to the distraction provided by figural work (*The Mathnawi of Jalalud'din Rumi*, trans. R.A. Nicholson, Bks I-IV, rev. edn (Cambridge: Gibb Memorial Trust, 1982), IV:v. 911–912 and V:v. 1502), and otherwise makes no mention of any possible Muslim idolatry towards contemporary Rum Seljuk seventh/thirteenth-century images, pictorial, sculptural or automata; rather, his references to idolatry are concerned with idolatry in the heart, as this discourse makes clear.

[36] For example, Sultan Maḥmūd of Ghazna was described as "a second Solomon", by Badī' al-Zamān al-Hamadhānī (d. 399/1009) (E.G. Browne, *A Literary History of Persia*, volumes I–II (Bethesda, MD: Ibex, 1997), II:113); the palace of Jehoseph bar Najrallah, vizier to the mid-fifth/eleventh-century ruler of Granada, that was erected on the site of the Alhambra, was described by Ibn Gabirol in his poetry as repeating the architectural works of the prophet Sulaymān (R. Hillenbrand, *Islamic Architecture*, 2nd edn (Edinburgh: Edinburgh University Press, 2000), p. 452); and the Great Seljuk Sultan Sanjar was described as "a second Solomon" by the poet Khaqānī (499–580/1106/7–1185) (Browne, *Literary History of Persia*, II:396). The same epithet was also applied to the Ghaznavid Sultan Ma'sūd III (492–508/1099–1115) by Abū l-Faraj Rūnī, who called him "The Solomon of the Age" (C.E. Bosworth, *The Later Ghaznavids: Splendour and Decay, the Dynasty in Afghanistan and Northern India 1040–1186* (New York: Columbia University Press, 1977), p. 89; Mas'ūd-i Sa'd-i Salmān referred to Sultan Malik Arslān Ma'sūd b. Ma'sūd III (509/1116): "With the power and omnipotence of Süleyman since I am from the origin and progeny of Da'ud" (ibid., p. 91); it was a title of the Salghurid ruler of Fars, Abū Bakr Muẓaffar al-Dīn, Qutlugh Khān b. Sad-i b. Zangī (622–658/1226–1260) recorded by the poet Sadi in his dedication of the *Gulistan*, "The Lord of the Earth, The Axis of the Revolution of Time, *the Successor of Sulaiman*, the Defender of the People of the True Faith, the Puissant King of Kings, the Great Atabak", and the Atabak is again described as "*Heir to the Throne of Sulaiman*" (*The Rose Garden of Shekh Muslihu'd-Din Sadi of Shiraz*, trans. E.B. Eastwick (London: Octagon, 1974), pp. 6, 15. See below n. 140, for reference to the Rum Seljuk rulers described as the "Second Sulaymān". Similarly, in the fourteenth century, the rulers of Fars adopted the title "*Heir to Solomon's Kingdom*" (S.S. Blair and J. Bloom, *Art and Architecture of Islam 1250–1800* (New Haven, CT: Yale University Press, 1995), p. 23.

[37] For examples of this symbolism see below; also T.M.P. Duggan, "The motifs employed on Rum Seljuk 13th century eight-pointed star tiles from Antalya province and elsewhere in Anatolia: An interpretation", *Adalya*, 9 (2006): 149–219, esp. pp. 206–208. There are innumerable later examples of Islamic works related to the jinn under the prophet Sulayman or the second Süleyman's command, many marked as such by the six- or eight-pointed star, and see for example the illuminated copy of the *Süleymaname*, the "Book of Solomon", by Firdaws (c. 900/1500), in the Chester Beatty Library, Dublin, for some later depictions of the jinn.

[38] Blair and Bloom, *Art and Architecture of Islam*, p. 56.

of ruler-ship within the Islamic world by the erection of palaces, court protocol and the ruler's increasing seclusion from the population, practices that had no precedent in the Prophet Muḥammad's lifetime. The precedent that was found to justify the palace and its marvels was in the example provided by the prophet Sulayman, the wise and just ruler described in the Qur'ān, with armies of men, birds, animals and jinn at his command[39] and, more questionably, in the surviving works and the preserved literary record of the Persian Sassānid monarchs, such as Cyrus-Khusrev.[40]

When the prophet Sulaymān remarked of the Queen of Sheba, "She is possessed of every virtue and has a splendid throne",[41] he called her to the faith in the One God and to renounce her worship of the sun. He summoned the Queen of Sheba (Belkis)'s throne to his palace, brought in the twinkling of an eye by his vizier Assaf bin Berachia, and then had it altered, to determine whether she clearly recognised it as her own throne. Solomon asked her, "Is your throne like this?" And she replied, "It looks as though it were the same".[42] She did not recognise her own throne, but could only see a resemblance between the throne she saw before her and her own throne. Consequently Solomon comments, "Her false gods have led her astray, for she comes from an unbelieving nation".[43] The queen then mistook the glass, polished, mirror-like floor of his audience chamber for a pool of water, and, "when she saw it she thought it was a pool of water, and she bared her legs.

[39] For the battle between the armies of Sulayman and the King of the Sea and his jinn, see Mathers, trans. *The Thousand Nights and One Night*, II:292–294.

[40] The historian Abū l-Ḥasan 'Alī al-Mas'ūdī (d. 345/957) records that he saw in 302/915–6 at Istakhr, a copy of the history of the Sassānid Kings, the fifth-sixth-century Royal Book, *Xwaday-Namag-Khudhay Namak*, a copy of which was used by Abū l-Qāsim Firdawsī of Tus (d. 415/1025–6) at the end of the fourth/tenth century for his monumental *Shāh-Nāmeh*, and which was also the source for the Persian King list given in the work of Abū l-Rayḥān Muḥammad b. Aḥmad al-Bīrūnī (325–439/973–1048) entitled, *Āthār al-bāqiya 'an al-qurūn al-khāliya*, detailing the calendars and eras of ancient peoples. The illustrated manuscript of the Sassānid Kings that was seen by al-Mas'ūdī was written in Arabic and was probably a copy, rather than the original, of the translation of the Royal Book that had been made in 112/731, translated into Arabic from Persian by 'Abd Allāh ibn al-Muqaffa' (d. 139/757) for the Omayyad Caliph Abū l-Walīd Hishām b. 'Abd al-Malik (105–125/724–743). It contained individual miniatures of 27 Sassānid rulers in their royal robes (revised translation in R. Irwin, *Islamic Art* (New York: Harry N. Abrams, 1997), p. 181). Another similar volume also survived into the fourth/tenth century in the castle of Shīz, by Takht-i Sleymān, the site of the fire temple of Atur Gushnasp, which was recorded by Abū Isḥāq al-Fārisī (Iṣtakhrī) (Arnold, *Painting in Islam*, p. 82. This copying of the Sassānid Royal Book is important, first, because it indicates an interest in the Sassānid dynasty at the apex of the Umayyad state in the second/eighth century; second, because it may indicate an interest in portraits of rulers by this caliph, and there are indications that portraits were made of Umayyad caliphs, which were then added to a Persian copy of this, or to a related Sassānid illuminated text depicting rulers; and third, because one can assume that these miniatures, copies of those in the Persian original, were painted for this translation made for the caliph by 112/731, and later copied, indicating the production of illuminated portrait miniatures in the early second/eighth century, influenced by Sassānid models, prior to the 'Abbāsids' wholesale adoption of Sassanid court style, which also influenced, for example, the choice of names of the later Rum Seljuk seventh/thirteenth-century Sultans, with repeated reference to the Persian Kayani rulers in the names taken by Rūm Seljuk Sultans after Kilij Arslān II (550–587/1156–1192), three rulers adopting the name Keykubad (Qubad, Kawadh/Kubadh father of Khusraw-Kayhurev) on their accession, three Keyhusrev (Cyrus/Kisra/Kurush/Chosroes) and two Keykavas (Cyrus's son Cambyses, Kambujiya).

[41] Q 27:24.

[42] Q 27:41–42.

[43] Q 27:43.

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But Solomon said: It is a palace paved with glass".[44] This apparent pool of water in Solomon's audience chamber was a work of *'ajā'ib*, wonder, like the subtle change made to the Queen of Sheba's throne, sufficient to cause a misapprehension in her mind, she being unaware of this device, and confirming, together with her inability to recognise her own throne, that she did not recognise reality—what was real, what was the Truth—when she saw it in before her own eyes, that she had in fact been misled in her judgement, a realisation that resulted in her conversion.

It was this ability to deceive all who were brought before the ruler, except for those who saw truly or who had some prior knowledge (one of the reasons why automata were not used repeatedly upon each and every envoy but at times disappear, to re-appear when required to startle and amaze), that helps to explain the longevity of the tradition at Islamic courts of employing moving, speaking statues, and of their powerful impact. They were designed and were employed to overthrow the senses of envoys and others, so that the ruler with such wondrous devices at his command prevailed, and was seen to prevail by envoys and courtiers alike within a diplomatic context, which seems to have been the most important function of the moving statues, amongst other palace devices and marvels.

The Throne of Solomon,[45] the throne of the ruler, the sculptures of lions and the tree, usually a date palm with its army of birds[46] on the branches, together with a pool, of mercury, or lined with plates of silver or tin, and highly polished marble floors, large decorated bronze and brass cauldrons, all echoed the attributes of Solomon's Palace. They were symbols of the archetypal ruler and of his control over the creative powers of the jinn and of *jinn*-like works of wonder, works that at times were clearly marked by the seal of Solomon device, the six or eight pointed star.

A consequence of this precedent, of the prophet Sulaymān as the just and wise ruler with the jinn at his command, was that in palaces from Baghdad to Córdoba, Konya to Cairo, these devices, the sculptures and other known features of Solomon's Palace, were repeated, in tile work designs, in designs on decorated pottery, metalwork and woodwork as on textiles, tanks and pools and their like, and in the production of moving statues. The polished mosaic floors of the Omayyad palaces and the pool lined with plates of silver in 'Abbasid Samarra, as also the

[44] Q 27:44.

[45] Described in the Bible: "Moreover the King (Solomon) made a great throne of ivory, and overlaid it with the best gold. The throne had six steps, and the top of the throne was round behind: and there were stays on either side on the place of the seat, and *two lions* stood beside the stays. And *twelve lions* stood there on the one side and upon the other on the six steps; *and there was not the like made in any kingdom*" (1 Kings. 10:18–20); also "Moreover the king made a great throne of ivory, and overlaid it with pure gold. And there were six steps to the throne, with a footstool of gold, which were fastened to the throne, and stays on each side of the sitting place, and two lions standing by the stays: And twelve lions stood there on the one side and upon the other on the six steps. There was not the like made in any kingdom" (2 Chronicles 9:17–19).

[46] A reminder of one of the four armies, the army of birds, commanded by Sulaymān. A description of the armies at the prophet Sulaymān's command occurs in The Extraordinary Tale of the City of Brass (341st Night) (Mathers, trans., *The Thousand Nights and One Night*, II:293): "When Süleyman learned the treatment which his envoy had undergone, he grew mightily indignant and at once assembled all his forces, *of jinn, of men, of birds and of animals*. To Asaf ibn Barakhya he gave command of his human soldiers; to Dimiryat, King of the Afarit (of the air), the leadership of all the forces of the jinn to the number of sixty millions and also of the troops of animals and birds of prey which he had assembled from the earth and sky and sea. Heading the combined force himself, Süleyman entered the lands of my master and drew his army up into battle array".

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pools of quicksilver-mercury,[47] sometimes stirred to illuminate the ceiling of a decorated *iwan* or hall,[48] or pools of water lined with tin or silver in many palaces in the Islamic world,[49] echoed and served a similar function to the prophet Sulaymān's glass floor in his palace, reflecting, mirroring,[50] blinding with reflected sunlight. These were combined with gilded ceilings, lustre tile work and lustre vessels, vessels inlaid with silver, gold and niello, light reflecting, embroidered, woven and iridescent textiles, fountains and water slides, rich carpets, scents and incense; figural sculpture in metal of lions and birds, life-sized horsemen and sometimes human-headed jinn with the body of a feline creature or a bird, that moved and sometimes spoke, in a secluded environment with controlled lighting.

These devices of the "Second Sulaymān" were not for everyday use, but were part of the expression of ruler-ship, power and court culture, and they were employed in carefully staged performances that could take months or years to plan and prepare, to achieve the desired effect upon a group of foreign envoys or other important guests.

The distinction between these works of wonder, echoing the prophet Sulaymān and the works made at his command by the jinn, and the sin of idolatry, of worshipping a speaking statue is clearly stated in the Qur'ān (20:87): "They said: We broke not tryst with thee of our own will, but we were laden with burdens of ornaments of the folk, then cast them (into the fire), for thus Al-Samīrī proposed. Then he produced for them a calf, of saffron hue, which gave forth a lowing sound. And they cried: This is your god and the god of Moses, but he hath forgotten".[51] The passage records the making of a metal statue of a calf that produced a lowing sound, which they worshipped. There is no evidence whatsoever to suggest that the moving, speaking statues at Islamic courts were worshipped, although there are hints that something close to this was perhaps the case for at least one possible sixth–seventh/twelfth–thirteenth-century automata, which was probably of Islamic origin, in Christian hands in the seventh/thirteenth century.[52]

[47] For the symbolism of mercury, as the dissolver of gold, the royal metal, see T. Burckhardt, *Mirror of the Intellect: Essays on Traditional Science and Sacred Art*, trans. W. Stoddart (Cambridge: Quinta Essentia, 1987), pp. 132–141. For the occurrence of mercury coated dinars, see A. Kaczmarczyk, R.E.M. Hedges and H. Brown, "On the occurrence of mercury coated dirhems", *Numismatic Chronicle*, 7th ser., 17:137 (1977), 162–170.

[48] The mercury-filled pool beneath a domed pavilion at Madīnat al-Zahrā', was stirred at the caliph's command to cast light into the dome (Hillenbrand, *Islamic Architecture*, p. 443).

[49] Such as at the palace of the Ṭulūnid Khumarawayh (270–281/884–895) at Fusṭāṭ (Hitti, *History of the Arabs*, p. 454); as also at Madīnat al-Zahrā in the tenth century, where there was a mercury-filled pool beneath a domed pavilion (Irwin, *Islamic Art*, p. 121); as also at the Artukid palace at Diyarbakr. See O. Watson, *Ceramics from Islamic Lands* (London: Thames & Hudson, 2004), pp. 128–129, re the possibility of mercury transport in spherical-conical vessels. There was also the tin (mercury?) filled (lined) pool in the New Köşk (pavilion) in Baghdad, with four boats floating on it, that was seen by the Byzantine envoys in 917 (Kennedy, *The Court of the Caliphs*, p. 154, citing Hilāl al-Ṣābī (d. 447/1056)).

[50] On the symbolism of the mirror, applicable to the numerous surviving Seljuk examples, see Burckhardt, *Mirror of the Intellect*, pp. 117–123, and for thirteenth-century examples of the significance of the mirror, see Chittick, *Me and Rumi*, pp. 228, 290–291.

[51] Also Q 7:148: "And the folk of Moses, after (he had left them) chose a calf (for worship), (made) out of their ornaments, of saffron hue, which gave a lowing sound".

[52] M. Barber, *The Trial of the Templars* (Cambridge: Canto, 2000), p. 183: "the idol in the form of a head, which according to these witnesses had up to four faces, was also described by one Templar as having two small horns *and possessing the ability to reply to questions put to it*", which may indicate some form

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Some references to moving statues and related devices in the Islamic world and adjacent territories to the end of the seventh/thirteenth century

Building upon earlier examples,[53] the organ[54] (Arabic, *urghun*; Turkish, *org*), both the bellows type and the true organ, were employed in Byzantium, in the palaces, at banquets and processions; both the green and the blue factions – into which popular politics was organised – had an organ of the bellows type at the chariot races held in the hippodrome, and organs were employed at imperial weddings.[55] An organ was sent as a diplomatic gift by the Emperor Constantine V (123–158/741–775) to King Pepin in 139/757. Hārūn b. Yaḥyā records an East Roman organ with 60 copper pipes, while al-Mas'ūdī records one with two or three bellows, which fed air into a pipe chest. Organs were not employed in the churches of the Empire. Two organ constructors are known to have flourished in sixth/twelfth-century Syria: Abū l-Majd b. Abī l-Hakīm (d. 575/1180) of Damascus and Abū Zakariyya Yaḥyā l-Bayāsī, an organ constructor who was in the service of al-Malik Nāṣir I, Ṣalāḥ al-Dīn al-Ayyūbī (Saladin) (564–588/1169–1193).[56]

Possibly the first record of a sculptural automata made in the Islamic world is the famous metal hollow sculpture of a lancer on horseback,[57] made of copper covered with gold leaf. It was erected by order of the 'Abbāsid Caliph Abū Ja'far al-Manṣūr (136–158/754–775) on top of the Green Dome-Dome of Heaven (*al-Qubba l-Khaḍrā'*) above his audience chamber in his palace of the Golden Gate at the centre of the round city-palace complex of Baghdad, which enclosed an area of 450 hectares, and similar mobile sculptural devices were erected over each of the four domed audience halls located above the four gates to the city.[58] Perhaps the figures mounted on the domes over the four entrances to the city included

(*footnote continued*)
of automata, that appears to have been described on occasion as the head of Baphomet, presumably a gift from Muslim ruler to the Order.

[53] Lindsay, *Blast-Power and Ballistics*, p. 329. Heron has a design for an organ driven by wind power from a windmill (Fig. 2), another driven by water power (Fig. 58), and another powered by manual labour.

[54] The reason for the inclusion of references to organs in this article is because of the connection between organs and automata, not only at the engineering-technological level, but also because organs are reportedly associated with the singing birds and tree by the throne of the Emperor in the third/ninth and fourth/tenth centuries, as may have been the case under the 'Abbāsids, and because of the later references to organs in connection with the automata of the tree in Latin sources, such as the sixth/twelfth-century German illustration of a drawing made by Dom Martin Gerbert of St Blasien (described as "A tree of cast metal, whereof we read in the Deeds of Alexander that it takes its breath from below and gives forth divers sweet sounds through birds' beaks"), and in Albrecht von Scharffenberg's continuation of Wolfram von Eschenbach's unfinished Parsival, where the organ's connection with birds is repeated (Coulton, *The Fate of Medieval Art*, App. 31, XVIII).

[55] J. Herrin, *Women in Purple: Rulers of Medieval Byzantium* (Princeton, NJ: Princeton University Press, 2001), p. 63.

[56] Hitti, *History of the Arabs*, II:155, 163, citing Ibn Abī Usaybi'a.

[57] A miniature of this type of dome surmounted by a mounted figure with a lance survives in various copies of Badī' al-Zamān ibn al-Razzāz al-Jazarī's work (Istanbul, Topkapi Saray Museum (TSM) (Manuscript), Kitablığı, Ahmet III, 3472, f. 88b), where it forms the finial to a clock automata, as in the 754/1354 copy of the same work from Mamluk Egypt (T. Falk, *Treasures of Islam* [Exh. Cat.] (London: Sotheby's, 1985), Cat. Nos. 12, 41).

[58] M. Hattstein & P. Delius (eds), *Islam: Art and Architecture* (Cologne: Köhnmann, 2000), pp. 96–98; Hitti, *History of the Arabs*, p. 293; K.A.C. Creswell, *A Short Account of Early Muslim Architecture* (Harmondsworth, UK: Penguin, 1958), p. 165, citing al-Khaṭīb's description: "These halls of audience

birds, such as the singing bird depicted surmounting a dome in one of the devices in Badī‘ al-Zamān b. al-Razzāz al-Jazarī’s seventh/thirteenth-century work, *Al-jāmi‘ bayn al-‘ilm wa l-a‘māl al-nāfi‘ fī ṣinā‘at al-ḥiyal*, “A compendium of theory and useful practice in the mechanical arts”—birds that were perhaps to be read as symbols of the army of birds under Sulaymān’s command, and thus were a reference to the Second Sulaymān, the caliph, with this horseman regarded as a symbol of the ‘Abbāsid caliphate and perhaps representing the caliph himself.

Built between 144/762 and 148/766, this statue of the lancer was erected over the dome, 40 metres above the ground, and was of a significant size. It is reported to have rotated on the dome, to have turned about and to have pointed to indicate the direction of threat to the caliphate and was not therefore a weather-vane-like sculpture, but had a different mechanism. With the Green Dome—the Dome of Heaven—visible from the edge of the vast city surrounding the inner city, it must have been a truly impressive sight. The horseman and the dome were brought down in a storm in 329/941.

The lance/spear this figure carried may have been understood to represent the spear of the prophet Sulaymān that was possessed by the ‘Abbāsid caliphs,[59] or perhaps the caliphal lance (*ḥarba*), that was at times carried in procession.[60] It may be that the symbolic significance of this horseman and his lance was recognised by the Emperor Theophilus (213–227/829–842) in his Roman-style triumph, marking his attack on Muslim settlements of 215/831, celebrated in Constantinople when the first recorded East Roman joust took place,[61] during which the eunuch Krateras challenged an Arab captive and unseated him with his lance. The ‘Abbāsid response to this East Roman attack was the siege and sack of Amorium 6–18 Ramaḍān 223/1–12 August 838, during the reign of the Caliph Abū Ishāq al-Mu‘taṣim (218–227/833–842).

The horseman on the Green Dome was famous and was described in the fourth/tenth century as “the crown of Baghdad, a guidepost for the region and one of the great achievements of the Abbasids”.[62] Yāqūṭ b. ‘Abdallāh al-Ḥamawī (575–626/1179–1229) recorded in his *Mu‘jam al-buldān* that the lance of the horseman always pointed towards any danger that threatened the caliphate,[63] and the image of the brass lancer on horseback on top of the green dome in Baghdad has marched on through the centuries. It was later copied by the founder of the Naṣrid Sultanate of Granada, Muḥammad I al-Ghālib, Muḥammad b. Yūsuf b. Naṣr, Ibn-al-Aḥmar (629–671/1232–1272, ruling in the city of Granada from 634/1237 onwards) who: “had an equestrian statue made *of himself* in full armour with lance and shield

(*footnote continued*)
(over each of the 4 gates to the city) were each covered by a great dome 50 cubits high and gilt. Each dome was surmounted by a figure which turned in the wind”.

[59] Kennedy, *The Court of the Caliphs*, p. 282, citing the *History* of al-Ṭabarī, 1, 638–639, which records that the Caliph Musta‘īn attended Friday prayers on 11 Dhū l-Ḥijja 251/2 January 866, the Feast of Sacrifice, preceded by the both the caliphal spear of authority and the prophet Solomon’s spear.

[60] M.S. Gordon, *The Breaking of a Thousand Swords: A History of the Turkish Military of Samarra A.H. 200–275/815–889 C.E.* (Albany: State University of New York Press, 2001), p. 179, n.152. The Caliph al-Mutawakkil’s palace had three huge gates “through which a rider could pass lance in hand”, al-Ya‘qūbī reports (Hillenbrand, *Islamic Architecture*, p. 402), presumably for the procession of the caliphal lance.

[61] Herrin, *Women in Purple*, p. 199.

[62] Kennedy, *The Court of the Caliphs*, p. 136, n. 12, from Ibrāhīm b. ‘Alī al-Khutabī (d. 340/951).

[63] Hitti, *History of the Arabs*, p. 293.

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that revolved like a weather vane to all points of the compass. Under it was written: 'Habuz Aben Habuz (sic), The Wise, lets it be known that thus Andalusia must be defended'".[64] The report of this device in this tenth/sixteenth-century account raises the question as to whether the statue in Baghdad erected on top of the domed hall of audience between 145/762 and 149/766, actually depicted, or was regarded, as a likeness of the Caliph al-Manṣūr, a point upon which the surviving sources are silent, but which seems not entirely improbable.

The image of this moving lancer statue was carried on Islamic coins and seals,[65] an image which may be understood to have been utilised as a symbol of the 'Abbasid caliphate itself, as also through the depictions of the horseman on the green dome in manuscript copies that must predate those contained in copies of al-Jazarī's manuscripts. This was also carried through the centuries on the breath of storytellers. A similar sculptural device is recorded in *The Book of the Thousand Nights and One Night*, in the "Tale of the Third Kalandar", the brass rider of the Magnetic Mountain: "On the top of the mountain there is a dome of brass lifted on ten columns, and upon this dome stands a rider mounted upon a brazen horse, with a brazen spear in his hand and a plate of graven lead upon his breast bearing unknown and talismanic signs".[66] It may be echoed in a further image described in "The Extraordinary Tale of the City of Brass", during the search for the copper jars sealed with the seal of Sulaymān, son of Dā'ūd, (David), which contained the disobedient jinn.[67] This search was said to have been led by the Amīr Mūsā on the orders of the Umayyad Caliph 'Abd al-Malik b. Marwān (65–86/685–705),[68] " . . . they saw, outlined against the setting sun, the appearance of a motionless rider,

[64] D. Hurtado de Mendoza, *The War in Granada*, trans. M. Shuttleworth (London: Folio Society, 1982), pp. 31–32. This account was recorded by one of the most informed of Spaniards writing in the tenth/sixteenth century, who was both familiar with Granada and the accomplishments of Andalusian civilisation, and who was banished from the Spanish court as a result of this work, a factual account, rather than a panegyric in praise of the Catholic Spanish monarchy and its genocidal activities in favour of the "New Christians", which resulted in the expulsion of the non-Catholic populations. Irving reports that this device was located on a turret of a tower (later called *La casa del Gallo de Viento*) of the Albaicin, opposite the Alhamra (W. Irving, *Tales of the Alhambra* (London: Henry Colburn, 1832), pp. 132–134).

[65] Rather than necessarily being a copy of St George, as this lancer figure is often said to be, it may represent the caliph or his representative on horseback with the lance (cf. E. Batur, *A Rainbow Linking East and West*, Yapı Kredı Exh. Cat. 1994, Cat Nos. 17, 20, 21, 25, 26, 27, 29).

[66] Mathers, trans., *The Thousand Nights and One Night*, I:90 (14th Night). H. Haddawy, *The Arabian Nights* (London: Everyman, 1992), p. 115, from an eighth/fourteenth-century Syrian mss by Muhsin Mahdī reads: "As soon as we sail below the mountain, the ship's sides will come apart and every nail will fly out and stick to the mountain, for the Almighty God has endowed the magnetic stone with a mysterious virtue that makes the iron love it. For this reason and because of the many ships that have been passing by for a long time, the mountain has attracted so much iron that most of it is already covered with it. On the summit facing the sea, there is a dome of Andalusian brass, supported by ten brass pillars, and on top of the dome there is a brass horseman, bearing on his breast a lead tablet inscribed with talismans". This version of the story may refer to the statue erected in Granada, rather than or combined with that on the Green Dome in Baghdad. It also offers an explanation for the use of copra cords to bind together the planks forming a ship, as traditionally employed in ship construction in the Red Sea, Arabian Gulf and Indian Ocean, in preference to nails, which would spring out, if, as was frequently the case, a ship struck or touched a coral reef. For sewn boats see, G.F. Hourani, *Arab Seafaring* (Princeton, NJ: Princeton University Press, 1995), pp. 91–98,151–152; E.B. & C. Martin, *Cargoes of the East: The Ports, Trade and Cultures of the Arabian Seas and Western Indian Ocean* (London: Elm Tree Books, 1978), pp. 9–10.

[67] Defeated in battle by Sulaymān's armies and imprisoned in these jars for insulting his envoy.

[68] Mathers, trans., *The Thousand Nights and One Night*, II:285–286.

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set high upon a pedestal, brandishing a mighty iron lance which glowed like a flame by reason of the fiery star upon the horizon". When they came close, they could distinguish that the rider, his horse, and his pedestal were all of brass and that, upon the iron of the lance, were graved these words in fiery character:

> If you know not where to go
> In this forbidden place,
> Turn me about with all your strength
> And I will show
> Your path by the direction which at length
> I face.

The Emir Mūsā approached this statue and pushed it with his hand; at once, with the quickness of light, the rider turned and halted with his face towards a point of the compass directly opposed to that which the travellers had been following, so that 'Abd al-Ṣamad knew that he had been mistaken and that the new direction was the right one".[69] This tale describes the lancer statue-automata and its ability not only to rotate, but also to indicate the right-true direction for travellers, recalling to the listener the lancer on the green dome and its reputed rotational capacity and that it provided an indication of direction to follow, either to meet with approaching danger as in Yāqūṭ's description of it, or, as in this tale, to indicate the true path—that taken by the caliph.

It is possible that the mechanical flying horse of brass upon which an Arabian knight travels to the Tartar court of King Cambuscan (Chingiz Khan) recorded by Geoffrey Chaucer at the end of the eighth/fourteenth in the *Canterbury Tales*, in his unfinished "Squire's Tale",[70] was an echo of the tales that were related concerning this revolving lancer on the green dome—the dome of heaven in Baghdad, or of a related equestrian sculpture such as that erected by Muḥammad I al-Ghālib, in seventh/thirteenth-century Granada.[71] Chaucer also seems to have had some confused knowledge of elements of Muslim court protocol, as the other gifts sent by the "Lord of Araby and India" to Chengiz Khan in this tale, in addition to the flying brass horse were: a magic mirror, Solomon's seal ring allowing the wearer to know the language of birds, and a marvellous sword. The seal ring, the sword and a finely harnessed steed, were all gifts that were, as a matter of caliphal protocol, given by the 'Abbāsid caliph to sultans as a part of their official investiture by the caliph or his representative. This combination of investiture gifts from the caliph resonated powerfully with the symbolism of Sulaymān, which in part, maintained the association of the just Islamic ruler with the prophet Sulaymān b. Dā'ūd, in addition to the references in the Qur'ān and their echo found in dedications of works and in the eulogies of court poets to, "the second Sulaymān", and to "the throne of Sulaymān", that is, to the throne of the just and wise ruler.

An intricate water clock automata is reported to have been presented by the Caliph Hārūn al-Rashīd (170–193/786–809) to the Emperor Charlemagne

[69] Mathers, trans., *The Thousand Nights and One Night*, II:291.
[70] R. Irwin, *The Arabian Nights: A Companion* (Harmondsworth, UK: Penguin, 1994), p. 96.
[71] Or perhaps of the Tale of the Ebony Horse, from some version or fragment of *The Tales of the Thousand Nights and a Night*.

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(c. 124–198/742–814), as well as fabrics, aromatics and an elephant,[72] by the Carolingian envoy Radbert, who returned from Baghdad in 190–191/806–807 together with Hārūn al-Rashīd's envoy to Charlemagne, 'Abd Allāh.

The Palace of the *Magnaura* was built by Constantine opposite the Church of St Sophia, east of the Augustaion in Constantinople, and probably served as the Senate House. It was rebuilt by Justinian I (527–565) and was restored by Heraclius (610–641) after 7/628, and it served as the nuptial chamber for the marriage of Leo and Irene in 152/769.[73] This building was of a basilica plan, with apses to the east and two lateral aisles supporting galleries. The Emperor Theophilus (214–227/829–842) installed in the central eastern apse splendid automata, "the working of wonders", *thaumatopoiike*, "where the imperial throne was overshadowed by a golden plane tree, its branches full of jewelled birds, some of which are said to have hopped off the tree and onto the throne itself. Around the trunk of the tree were lions and griffons couchant, also of gold. Still greater would be the visitors wonder when, at a given signal, the animals would rise up, the lions would roar and all the birds would burst simultaneously into song.[74] After a while the chorus would be interrupted by a peal of music from a golden organ,[75] after which there would be silence to permit the emperor and his guests to talk. Then, the moment the ambassador rose to leave, the whole chorus would start up again and continue until he left the chamber".[76] These automata representing the "throne of Solomon" are reported by Glykas to have been constructed by the engineer Leo the mathematician 174–c.255/790–c.869,[77] relative of the iconoclast Patriarch John VII Grammatikos, and teacher of philosophy, who re-introduced the study of higher mathematics to Constantinople and was elected Metropolitan of Thessalonike (225–228/840–843). His knowledge of higher mathematics was gained from copies of the works of Euclid, Archimedes and Diophantus, and from Pappus's "*Synagogue*", which he was taught on Andros. He also designed a visual signalling system, linking the capital on the Bosphorus to the Eastern borders.[78] Leo's ability and fame was such that the 'Abbāsid Caliph al-Ma'mūn (197–218/813–833) offered the Emperor Theophilus 2,000 pounds of gold and peace between the Caliphate and Byzantium, peace between Islam and Christendom, if Leo would reside for a while in Baghdad;[79] this indicates the enormous value placed upon such jinn-like wonder workers/engineers, by both the caliph and the

[72] Hitti, *History of the Arabs*, p. 298.

[73] Herrin, *Women in Purple*, p. 62.

[74] The production of singing bird automata, the notes of the blackbird produced by the motion of water and the production of walking automata, little figures that drink and move, is dated back to Ktesibios of Alexandria by Vitruvius, from Ktesibios's books Lindsay, *Blast-Power and Ballistics*, p. 293, citing Vitruvius, ix, 8), and this was continued by Heron of Alexandria in his automata (Lindsay, *Blast-Power and Ballistics*, pp. 313–347).

[75] Coulton, *The Fate of Medieval Art*, App. 31, XIX, records that these two great organs were set with precious stones, (and enamels) in which the sound from the organ issued through birds.

[76] J.J. Norwich, *Byzantium: The Apogee* (Harmondsworth, UK: Penguin, 1993), p. 44; T. Bent, "Byzantine palaces", *English Historical Review*, 2:7 (1887): 466–481, at pp. 473–474; J. Beckwith, *Early Christian and Byzantine Art* (New Haven, CT: Yale University Press, 1993), p. 171.

[77] *Oxford Dictionary of Byzantium*, pp. 235, 1217.

[78] R. Browning, *The Byzantine Empire* (New York: Weidenfeld & Nicolson, 1980), p. 73.

[79] K.M. Setton, "The Byzantine background to the Italian Renaissance", *Proceedings of the American Philosophical Society*, 100:1 (1956): 1–76, at p. 30.

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emperor. The caliph's offer of gold and peace in exchange for the loan of Leo the Engineer was rejected by the emperor. The caliph also sent envoys with requests to Emperor Theophilus for copies of Greek works to be translated into Arabic at the *Bayt al-Ḥikma*, or House of Wisdom in Baghdad, the centre for translators established by al-Ma'mūn in 215/830.[80] Here works concerning the science of the ancients, *'ulūm al-awā'il*, including works by Ptolomey, Galen, Dioscorides and Platonic, Aristotelian and Hippocratic works that were taught at the *Dār al-'Ilm*, including mathematics, physics, astronomy, medicine, philosophy and grammar, were translated from Greek and Syriac into Arabic. Theophilus also built new palaces and pavilions, including the *Trikonchas*, the *Sigma* and the palace at Bryas, Maltepe, completed by 216/831, modelled on the caliph's palace in Baghdad, on the basis of reports supplied by the ambassador, John the Grammarian. He had been sent by Theophilus to Baghdad, specifically to record the palace at Baghdad, the court dress, ceremony and decoration.[81] A probable further consequence of this embassy was that polo was introduced from Baghdad, rather than direct from Persia, and which then became so popular that a field was built within the palace by Basil I (253–273/867–886). This echoing of 'Abbāsid court style was repeated 300 years later, under John II Comnenus (512–538/1118–1143), or more probably Manuel I Comnenus (538–576/1143–1180) in the mid sixth/twelfth century, when an imitation 'Abbāsid-style palace/pavilion, the *Mouchroutas*, was built in the grounds of the Great Palace, west of the *Chrysotriklinos*. It was decorated with a muqarnas dome and tile-work,[82] and possibly also had automata and a fountain,[83] the whole being a symbol of the wondrous devices (*'ajā'ib*) belonging to the elite culture of rulers of civilised states. Emperor Michael III (227–253/842–867) converted the Palace of the *Magnaura* into a school, where Leo taught, and it seems as if this was the end of these automata; they were perhaps broken up and melted down, sold off to pay military costs[84] or put into storage. However, a very similar collection, possibly with the addition of an elevating throne, as earlier sources do not record this marvel, was seen in the same place a century later (see below). These automata were recreated with additions or were returned to the same palace, as they formed a key expression of power in dealing with foreign, more superstitious and less technologically advanced or aware envoys and rulers.

Knowledge of the wonders of the Caliph al-Ma'mūn's throne room is lacking, but al-Mutawwakil (232–247/847–861) had a throne room at Samarra, which

[80] Hitti, *History of the Arabs*, p. 310; Irwin, *Night and Horses and the Desert*, pp. 74 ff, in addition to the mainly medical works taken from Ancyra (Ankara) and Amorium, by Hārūn al-Rashīd in the 165–190/782–806 campaigns, and translated by Yuḥanna (Yahyā) ibn Masawayh (d. 243/857) (Hitti, *History of the Arabs*, pp. 311–312).

[81] Herrin, *Women in Purple*, pp. 198–199; Beckwith, *Early Christian and Byzantine Art*, pp. 170–171; S. Eyice, "İstanbul'da Abbasi Saraylarinin Benzen olorak yapilan bir Bizans Saray-Bryas Saray", *Belleten* 23:89, (1959): 79–111.

[82] S. Redford, "Byzantium and the Islamic world", in *Byzantium: Faith and Power 1261–1557* [Exh.Cat.], ed. H.C. Evans (New York: Metropolitan Museum of Art, 2004), pp. 389–414, at p. 390; Y. Tabbaa, *The Transformation of Islamic Art during the Sunni Revival* (Seattle: University of Washington Press, 2002), pp. 131–132; *Oxford Dictionary of Byzantium*, p. 870.

[83] Fountains are linked to automata in the literature of the period as they employ many of the same mechanical and hydraulic techniques and power. For a seventh/thirteenth-century design of a fountain with automatically changing jets by al-Jazarī, see Hassan and Hill, *Islamic Technology*, p. 64, fig 2.18.

[84] Beckwith, *Early Christian and Byzantine Art*, p. 171.

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Figure 1. Underglaze Rum Seljuk eight-pointed star tile from the Palace of Kubadabad, largely completed by 633/1236, by Lake Beyşehir, Turkey, possibly depicting one of the palm tree and birds automata, as in the *dār al-shajara* in caliphal palaces from the third/ninth century onwards (from *Turks: A Journey of a Thousand Years 600–1600*, ed. D.J. Roxburgh [Exh. Cat.] (London: Royal Academy of Arts, 2005), Fig. 64).

Shabushtī records was "decorated with great images of gold and silver and (he) made a great pool whose surface inside and out was in plates of silver. He put in it a tree made of gold in which birds twittered and whistled[85] (Figure 1). He had a great

[85] This fabulous tree became an image that echoed through time, repeatedly employed by rulers in palaces and employed by storytellers, for example, in "The Tale of the Unending Treasure", 815th Night: "in the other hand was a little tree whose trunk was of silver, whose leaves were of emerald and whose fruits were of rubies. When his host had set this tree before him the Khalifah noticed that there was a gold peacock of rare workmanship perched on top of it. As soon as Abu al-Kasim tapped this birds head with the amber wand, it stretched its wings, flirted the splendour of its tail, and began to turn round and round very fast upon itself. With this movement, it jetted threads of aloe and nard scent from a multitude of pin pricks in its sides, until all the air of the hall was freshened with the perfume" (Mathers, trans., *The Thousand Nights and One Night*, IV:22. Likewise in "The Tale of the Lazy Youth", 367th Night: "Abu Muhammed had two chests brought into the hall and drew from the first, among other marvels ravishing to the eye, three gold trees with gold branches, whose leaves were emerald and aquamarine, whose fruit were rubies for pomegranates, pearls for apples, and topaz in place of apples" (ibid., III:287; as also 360th Night: "artificial trees whose leaves were emeralds and their fruit rubies" (II:340).

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throne made of gold on which there were two images of huge lions[86] and the steps to it had images of lions and eagles and other things, *just as the throne of Solomon son of David is described*. The walls of the palace were covered inside and out with mosaics and gilded marble".[87]. However the caliph suffered from insomnia and developed a fever and when he recovered, he ordered the demolition of this throne room and the gold decoration melted down and minted as coin. As A. Grabar has indicated,[88] it seems the sculptural automata in the East Roman Magnaura Palace were copied, at least in part, from those in 'Abbāsid Baghdad and Samarra palaces.

There are Chinese reports from T'ang Dynasty (618–907) envoys to the East Roman court of a gold human figure that struck bells on the hour in Constantinople,[89] possibly a reference to the horologium with 24 doors, one for each hour, that stood by the Church of Hagia Sophia.[90]

Abū l-Qāsim 'Abbās b. Firnās (d. 275/888) not only introduced oriental music from Baghdad into Andalusia and is credited with the introduction of making glass "from stones", but he also constructed in his home a sort of planetarium from which one could see stars, clouds and even lightning upon demand, generated by some form of automata.[91] This celestial ceiling perhaps echoed some of the features that had been built into the 'Abbasid palaces of Baghdad and Samarra and in the later Palace of the Pleiades, *al-Thurayya*, built by the Caliph al-Mu'taḍid (279–289/892–902) at a cost of 400,000 dinars, which was destroyed in the sixth/twelfth century.[92] A palace pavilion was built by İlgin, at Afyon in Anatolia, by order of Sultan Alaed-Din Keykubat I (616–634/1219–1237), over a natural warm spring where a pool was constructed into which the water poured from the mouths of two lions; this pavilion had a glass dome (dating to c. 633/1236).[93] This continued the relationship of the temporal ruler with the ruler of the seven heavens; buttressing the legitimacy provided by the prophet Sulaymān's example and expressed later in the decoration of the dome of the Çinili Köşk in the Topkapi Palace in Istanbul, built by order of Sultan Mehmet II, which depicted the planets; the pool constructed in front of this *köşk*-pavilion reflected the 13 columns of the facade, indicating the 26 lunar mansions.

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[86] As also with the earlier stucco-plaster painted, life-size standing frontal statue of the Umayyad Caliph Abū 'Abd al-Malik Marwān II (126–132/744–750), with the pair of lions beneath him, from Khirbat al-Mafjar, and later, with a silver gilt and niello, repoussé dish, dating from the early fifth/eleventh century in the Hermitage, Saint Petersburg, depicting a frontal seated ruler wearing a Sassanid style winged headdress, which is thought to represent Sultan Maḥmūd of Ghazna, with an attendant on either side and two lions beneath his throne (M. Barry, *Figurative Art in Medieval Islam and the Riddle of Bihzad of Herat (1465-1535)* (Paris: Flammarion, 2004), pp. 52–53, 61, citing V. Lukonin and A. Ivanov, *L'art persan/Persian Art* (Bournemouth, UK: Parkstone, 1995); for this possible representation of Sultan Maḥmūd, see Ü. Erginsoy, *İslam Maden Sanatının Gelişmesi* (Istanbul: Kultur Bakanligi, 1978), pp. 54–55, res. 2.

[87] Kennedy, *The Court of the Caliphs*, pp. 147–148.

[88] A. Grabar, *L'art de la fin de l'antiquité et du moyen age*, volumes I–III (Paris: Collège de France, 1968), I:286.

[89] Beckwith, *Early Christian and Byzantine Art*, p. 171; *Oxford Dictionary of Byzantium*, p. 235, art. "automata".

[90] *Oxford Dictionary of Byzantium*, p. 947.

[91] Hitti, *History of the Arabs*, p. 598, citing Maqqari, Vol. II, 254.

[92] Hitti, *History of the Arabs*, p. 417, citing al-Mas 'ūdī, Vol. VIII, 116.

[93] Ü.Ü. Bates, "Evliya Çelibi's comments on the Saljuqs of Rum", in *The Art of the Saljuqs in Iran and Anatolia*, ed. R. Hillenbrand (Costa Mesa, CA: Mazda, 1994), pp. 257–262, at p. 259, n. 12.

The Caliph al-Mu'taḍid built his new *dār al-khilāfa* (caliphal palace) in Baghdad in 892, following the court's return from Samarra; the palace included automata. The palace built by the 'Abbāsid Caliph al-Muqtadir (295–320/908–932) contained another *dār al-shajara* (Hall of the Tree),[94] with a gold and silver tree with 18 branches rising from a pool/tank,[95] which was perhaps also lined with silver plates, like that of al-Mutawakkil. This tree of gold and silver weighed 500,000 drams, and was engineered so that it swayed at times, and its metal leaves rustled. In its branches were birds of many species made from the same precious metals, silver and gold, birds that chirped,[96] the sound being made by automatic devices. The tree was crowned with gemstones carved in the shape of fruits with gold birds, perhaps seemingly pecking at this succulent fruit. On each side of this tank stood statues of 15 horsemen, 30 life-sized statues of horsemen, dressed in brocade and armed with lances, horsemen automata that constantly moved as though in combat. This complex of automata in this Hall of the Tree, was seen by the envoys of the East Roman Emperor Constantine VII (300–348/913–959). They were concerned in 305/917 with the ransom and exchange of East Roman prisoners and were kept waiting for two months[97] so that everything they would see on their guided tour of the palace could be properly prepared, including the laying of 22,000 carpets and 38,000 curtains.[98] What the envoys saw after their two-month wait truly astonished them. They also visited the lake of tin, or rather a tin-lined lake that measured 30m.by 20m. inside the palace complex, upon which floated four

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[94] Timurid rulers at Samarkand had a similar tree, as tall as a man, with turquoises, emeralds, rubies, sapphires and pearls shaped like fruit, with gold birds eating the fruit. It was seen by Clavijo in 1405.

[95] Kennedy, *The Court of the Caliphs*, p. 154; Hitti, *History of the Arabs*, p. 303, citing Khatib, Vol. 1, 100-5; Abū l-Fiḍā', Vol. 2, 73; Yāqūt, Vol. 2, 520-1; see also Hitti, *History of the Arabs*, pp. 417, 419–420.

[96] On the symbolism of "the language of birds", see Q 27:15: "And Solomon was David's heir and he said: O men we have been taught the language of the birds, and all favors have been showered upon us.", see also, for example, *Manṭiq al-ṭayr* ("The Conference of the Birds"), by Farīd al-Dīn al-'Aṭṭār (c. 514–617/1120–1220), on the language of the birds, the language of the spirits of people.

[97] Kennedy, *The Court of the Caliphs*, p. 153, citing the account by Hilāl al-Ṣabī (d. 448/1056) from that recorded by one of al-Muqtadir's grandsons.

[98] A later record of this kind of preparation for an important event comes from the reign of the Ghaznavid Sultan Shihāb al-Dawla Mas'ūd I (422–432/1031–1041, 432–442/1041–1050) who held a celebration in 429/1038. The preparations for it took three years and the reports about it, although not including reference to sculptural automata, provide an indication of the usual setting for these devices and of the care and planning with which events of this kind were conducted: "They informed the Amir, and he ordered that they should install and set it down (the throne) on the great dais of the new palace, and put the building in order. Everyone who on that day saw the adornment never saw anything after it that could compare with it. The throne was constructed entirely of red gold, overlaid with shapes and patterns of branches and palm fronds. It was set with a large number of precious jewels, and over it was stretched lattice-work, again all encrusted with jewels. The throne itself was overlaid with covers of Rumi brocade. It had four well-filled cushions, made of silk and sewn with gold thread, laid down for the feet; a cushion for the back; and four other cushions, two for each side. A golden-plated chain hung from the ceiling of the chamber containing the dais, and came over the dais where the crown and throne were. The crown was attached to this chain, and there were four bronze figures fashioned in the shape of human beings and mounted on columns which were secured to the throne itself, so that their hands were outstretched and thus held the crown safely. In this way, the crown did not hurt the head since the chains and columns supported it, and the Sultan's cap could go underneath it . . . Within that opulently-appointed hall they set out a table, and in the middle of it, stretching towards the ceiling, was a pavilion made out of halva, and there was ample other food . . . " (C.E. Bosworth, *The Ghaznavids: Their Empire in Afghanistan and Eastern Iran 994–1040* (Edinburgh: Edinburgh University Press, 1963), pp. 135–136, citing Abū l-Faḍl Bayhaqī, *Ta'rīkh-i Mas'ūdī*, ed. Q. Ghani, 1940–53, 539–41.

Egyptian pleasure boats covered with gold embroidered Egyptian linen.[99] From the indications provided by the painted tile-work from seventh/thirteenth-century Rum Seljuk palaces, it seems probable that there was a similar palm tree with bird automata in the 630s/1230s in Anatolia (Figure 1), and an echo of the tree in the caliph's *dār al-shajara* can be sensed in the design, centuries later, of an Ottoman period fragrance coffer, a tree decorated with gold and enamel and ornamented with diamonds, pearls and rubies, like fruit hanging from it. At the apex of this tree is an enamelled sphere with diamonds that held the incense.[100]

Emperor Constantine Porphyrogenitus (295–347/908–959) had fixed into one side of his throne a golden organ tree with birds, continuing the association of the throne with the tree and the singing birds.[101]

The fountain erected by 'Abd al-Raḥmān III (299–349/912–961) in the Palace at Madīnat al-Zahrā' had a marble basin carved with human figures brought from Constantinople. Added to this basin were 12 creatures of gold with pearls applied, made at Córdoba, a lion with a gazelle beside it, a crocodile, a serpent, an eagle, an elephant, a dove, a falcon, a peacock, a hen, a cock, a hawk and a vulture, from whose mouths spouted water.[102] It is not known if these statues of creatures on the palace fountain spoke,[103] but it is not altogether impossible, given the link between running water and sound, and these statues may also have moved.

Ḥusayn b. Manṣūr al-Ḥallāj (d. 309/922) is recorded as possessing the "expanding chamber" containing concealed pipes and partitions that allowed al-Ḥallāj to create the appearance of a living lamb in a fiery furnace, to bring a fish from out of thin air and to make his own body appear to swell so that it filled most of the expanding chamber.[104] On other occasions he is reported to have produced an apple, musk and coins out of nowhere and a fresh cucumber from a snowdrift,[105] as well as raising the dead and *compelling the jinn to serve him*. He is also reported to have restored a dead parrot to life for the Caliph al-Muqtadir (295–316/908–929). He described in one of his books a model of the Ka'ba built in his room for pilgrimage,[106] perhaps following the replica of the Ka'ba at Mecca, with places intended to represent both Mina and 'Arafat, that was built by the Caliph

[99] Another somewhat deceptive palace pool of the type related to Q 27.44 (Hillenbrand, *Islamic Architecture*, p. 382.

[100] Köseoğlu, *The Topkapi Palace*, p. 56, Inv. No. 2390, measuring 16 cm by 12 cm.

[101] Coulton, *The Fate of Medieval Art*, Appendix 31, XIX.

[102] Arnold, *Painting in Islam*, p. 23, citing Makkarī.

[103] "The Tale of the Fair Sad Youth" relates: "I saw, in the middle of a pavilion whose floor was formed with a mosaic of many coloured jewels, a silver fountain basin surrounded by birds made of gold, from whose mouths the water jetted with so sweet a noise that it seemed as if the living voices of these creatures which the fountain copied were echoing back from the silver walls in forest music", 367th Night, Mathers, trans., *The Thousand Nights and One Night*, II:352.

[104] Louis Massignon, *The Passion of al-Hallaj, Mystic and Martyr of Islam*, trans. H. Mason, volumes I–IV (Princeton, NJ: Princeton University Press, 1982), I:155–161. Irwin, *Night and Horses and the Desert*, p. 129: "According to one witness, 'I was summoned. . .by the slave in charge of Hallaj, and when I went out to meet him he told me he had been taking to Hallaj the tray which was his daily custom to bring to him, when he found that Hallaj was filling the room with his person, stretching from roof to floor and from side to side, so that there was no space left; this spectacle frightened him so much that he dropped the tray and fled'. He added that, 'the slave was in a fever, shaking and trembling'".

[105] Browne, *Literary History of Persia*, I:429–433.

[106] Browne, *Literary History of Persia*, I:431–432.

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al-Mu'taṣim (217–227/833–842) at Samarra, to prevent his Turkish troops leaving to visit the Noble Sanctuary.[107]

The fourth/tenth-century historian, Luidprand, Bishop of Cremona and envoy of Berengar of Ivrea, came to Constantinople in September 337/949 during the reign of Emperor Constantine Porphyrogenitus (295–347/908–959). He stayed in the city until 9 Shawwāl 338/31 March 950 and records in his *Antapodosis* that he, together with Spanish envoys, probably envoys from al-Andalus, saw automata in the Palace called the *Magnaura* by the Church of St Sophia:

> A tree made of brass but gilded over stood before the throne. The boughs were full of birds of different kinds, also made of brass and also gilt, which sang in a chorus of different birdsongs according to their kind. The Emperor's throne was constructed with such skill that at one time it was level with the ground, at another it was raised above it and then in a moment it hung aloft. It was guarded as it were by lions of immense size-one could not be sure if they were made of brass or wood but they were certainly covered with gold on the surface-which opening their mouths and moving their tongues roared aloud and shook the ground with their tails. Here I was brought into the presence of the Emperor supported on the shoulders of two eunuchs. The lions roared at my coming and the birds sang according to their kind. Thrice I performed the act of adoration prone at full length upon the ground. Then I raised my head. Behold, the Emperor whom I had just before seen seated almost on the level of the ground now appeared to my eyes dressed in different robes almost level with the ceiling of the palace.[108]

Other automata, including clock automata, seem to have been functioning in Constantinople (see below). Luidprand also records that at a feast in the palace, three solid gold bowls filled with fruit and too heavy to lift, were suspended from the ceiling on chains covered with gilded leather and that they were moved (through pulleys) from guest to guest, hovering in the air between them.[109]

The *Dīwān* of al-Mutannabī (d. 354/965) records a statuette of a female dancing girl with long hair, a bouquet of flowers held in one hand and with one leg raised, that spun around and around until it came to rest on the table in front of a guest. The guest selected by the halting of this clockwork sculptural automata in front of his place then had to drain a cup of wine and improvise some verses. It was designed to irritate and mock al-Mutannabī by distracting the guests from the poet's verses, and it was ordered and employed by Karawwas, boon companion of Badr b. 'Ammār.[110]

[107] Gordon 2001, 65, from al-Muqaddasī's *Taqāsīm*, "Al-Mutasim built a Ka'ba there (at Samarra), laid out a route for circumambulation and created places meant to resemble Mina and Arafat so the allure the military chiefs in his service when they wanted to participate in the actual Hajj, fearing they would withdraw (from his service)."

[108] G. Mathew, *Byzantine Aesthetics*, p. 113; *Liutprand of Cremona: The embassy to Constantinople and other writings*, ed. J.J. Norwich (London: Everyman, 1993), p. 153; Norwich, *Byzantium: The Apogee*, pp. 169–170.

[109] Liutprand of Cremona, pp. 154–155.

[110] D.S. Rice, "A drawing of the Fatimid period", *Bulletin of the School of Oriental and African Studies*, 21:1/3 (1958): 31–39.

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Naser-e Khosraw records in his visit to the Fāṭimid Palace in Cairo on 8 Ramaḍān 438/8 March 1047, the day before the festival celebrating the birth of a son to the Fāṭimid Caliph Abū Tamīm al-Mustanṣir (427–487/1036–1094), that "For decoration on the banqueting table I saw a confection like an orange tree, every branch and leaf of which had been executed in sugar, and thousands of images and statuettes in sugar".[111] The artificial trees and clockwork singing birds in this Fāṭimid palace[112] are an echo not only of 'Abbāsid court culture, as in the various *dār al-shajara*, but also of the intention of the Fatimid caliph to be seen and remembered as the Second Sulaymān; neither Naser-e Khosraw nor Maqrīzī[113] records whether the golden peacock studded with precious gems, with eyes of rubies and a tail made of enamel in imitation of the varied colours of the living bird, and a huge cock, also of gold, covered with jewels, and a number of other sculptures of animals in the Palace of the Fāṭimid Caliph al-Mustanṣir were sculptural automata, but it is not impossible.

The Andalusian al-Murādī in the fifth/eleventh century describes a series of automata in his work, including one, driven by a waterwheel, that opened successive doors to expose automata figures, and involved complex methods of gearing.[114]

Under the Fāṭimids in sixth/twelfth-century Cairo, there is record of concubine automata in the hall of the Fāṭimid Vizier al-Afḍal Shāhanshāh (d. 514/1121). These were eight life-size female sculptures wearing splendid clothes and bedecked with jewellery, four black and four white, called amber and camphor respectively, that bowed low to the vizier on his entrance to his hall, as he crossed the threshold. Then, following this ceremonial entrance, when he sat down, they then stood upright again, forming an impressive entrance for the Fatimid vizier in front of his guests.[115] One part of the mechanism, the bowing action, was set in motion by a device by the threshold, and they were returned to the upright position through a mechanism attached to the vizier's seat, probably started by the pressure of the vizier's bodyweight.

Without doubt al-Afḍal's female automata were a high point in the development of figural sculpture at Islamic courts that extends back, past the series of life-size wooden figures carved in the likeness of the Ṭulūnid ruler, son of Aḥmad b. Ṭulūn, Khumarawayh (270–283/884–896) and of his concubines and singing girls, which stood within his palace at Fusṭāṭ; all these wooden painted figures were dressed in gold and wearing jewellery.[116] The palace also had a 50 cubits[117] square pool of mercury in the gardens, upon which Khumarawayh floated on air-filled leather cushions, moored by silver cords and silver rings to massive silver pillars at the corners, and in the gardens were gold-sheathed palm tree trunks, reminiscent of the palm tree in the *dār al-shajara*, gilded water tanks and gold-covered carvings of figures.[118]

[111] *Naser-e Khosraw's Book of Travels*, p. 57.
[112] Hillenbrand, *Islamic Architecture*, p. 435.
[113] Cited in Arnold, *Painting in Islam*, p. 22, n. 2.
[114] Hassan and Hill, *Islamic Technology*, p. 62; see also Donald R. Hill, "Technology and its influence on European mechanical engineering", in *The Arab Influence in Medieval Europe*, eds. Dionisius A. Agius and Richard Hitchcock (Reading: Ithaca Press, 1994), pp. 25–43.
[115] Rice, "A drawing of the Fatimid Period", citing Ibn al-Muyassar's *Akhbār Miṣr*.
[116] Irwin, *Islamic Art*, p. 111.
[117] Creswell, *Short Account of Early Muslim Architecture*, p. 1, records the cubit as 0.5 m, thus indicating a size of 5×5 m, 25 m^2, for this pool of mercury.
[118] Hitti, *History of the Arabs*, p. 454; Hillenbrand, *Islamic Architecture*, p. 382.

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Muḥammad al-Sā'ātī built a monumental water clock automata attached to the Jayrun Gate, *Bāb al-Ǧabiye*, of Damascus in 559/1164,[119] consisting of "a pair of brazen falcon clock automata that every two hours dropped brass balls from their beaks into brass cups, from where the balls returned automatically to the interior of the device",[120] a development of Archimedes' device for ejecting balls from the beak of a bird to mark the passage of time.[121] This device[122] was seen by Ibn Jubayr in 579/1184[123] and was recorded in Badī' al-Zamān Ismā'īl b. Razzāz Abū l-'Izz al-Jazarī's book, *Al-jāmi' bayn al-'ilm wa l-a'māl al-nāfi' fī ṣinā'at al-ḥiyal*, "A compendium of theory and useful practice in the mechanical arts" "A compendium of theory and useful practice in the mechanical arts", of c. 602/1206.[124] Part of the work was still functioning into the eighth/fourteenth century when Ibn Baṭṭūṭa recorded it in 726/1326:

> To the right as one comes out of the Jayrun door, which is also called the 'Door of the Hours', is an upper gallery shaped like a large arch, within which there are small open arches furnished with doors, to the number of hours in the day. These doors are painted green on the inside and yellow on the outside and as each hour of the day passes the green inner side of the door is turned to the outside and visa versa. *They say*[125] that inside the gallery there is a person in the room who is responsible for turning them by hand as the hours pass.[126]

It seems the falcons were no longer functioning in the eighth/fourteenth century. It is possible that Muḥammad al-Sā'ātī was also responsible for the mechanism of the fountain that was called "The Waterspout", in Damascus close to the Jayrun Gate, recorded by Ibn Baṭṭūṭa in 726/1326:

> In the middle of the passage there is a large round marble basin, surrounded by a pavilion supported on marble columns but lacking a roof. In the centre of the basin is a copper pipe which forces out water under pressure so it rises into the air to more than a man's height. They call it "The Waterspout," and it is a fine sight.[127]

[119] R. Burns, *Monuments of Syria: A Historical Guide*, 2nd edn (London: I.B. Tauris, 1999), p. 99.
[120] P.H. Newby, *Saladin in His Time* (London: Faber & Faber, 1983), p. 35. Recorded in 602/1206 by Jābir ibn al-Sā'ātī who describes this clock automata that was built by his father (Hassan and Hill, *Islamic Technology*, p. 57; Nasr, *Islamic Science*, p. 145).
[121] Hassan-Hill 1986, 56.
[122] Another water clock automata was recorded in Fez in 1317, with 13 consoles and bronze bowls rung to mark the hours, Blair and Bloom, *Art and Architecture of Islam*, p. 122.
[123] G. Le Strange, *Palestine under the Moslems* (Boston/New York: Houghton, Mifflin and Co., 1890, p. 50.
[124] İstanbul, TSM, Kitablığı, Ahmet III, 3472, s. 9b; G. Öney, *Anadolu Seluklu Mimari Süslemesi ve El Sanatları* (Ankara: İş Bankası, 1992), res. 125, s.187.
[125] My italics, to emphasise the casualness of the educated Ibn Baṭṭūṭa's reference to the fact that this was an automata—there were no men inside it as was believed by the uninformed.
[126] H.A.R. Gibb, *Ibn Battuta: Travels in Asia and Africa, 1325–1354* (London: Routledge & Kegan Paul, 1939), pp. 66–67.
[127] Gibb, *Ibn Battuta*, p. 66, n. 56, suggests it was Byzantine in origin, although perhaps in reference to the materials employed, rather than necessarily the device itself, which remains extant.

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It seems that some Islamic scholars in the sixth/twelfth and seventh/thirteenth centuries were even dreaming of automata. Nasr records that Muḥyī al-Dīn b. al-'Arabī, in his *Al-futūḥāt al-makkiyya*, describes a dream he had that is related to the Alexandrian school of automata, to the device whereby the double leaves of the bronze door to a Roman temple open, apparently of their own accord.[128]

Badī' al-Zamān's book records various automata that built further upon the works of the Alexandrian school[129] and the developments to this work made by the Banū Mūsā brothers in the third/ninth century, and al-Sā'ātī in the sixth/twelfth century, in his work for the Artukids at their palace at Diyarbakr under Maḥmud b. Muḥammad, al-Malik al-Ṣāliḥ Nāṣir al-Dīn (597–619/1201–1222). He designed a variety of automata including moving sculptures of various palace servants, some as centrepieces, mechanical boats for palace pools[130] (Figure 3), combination locks, water clocks, other devices and pumps. His combination of paired dragons and a lion's head for the palace door knockers, a design also employed on the main doors of the Cizre Congregational Mosque, reflect the symbolism of the prophet Sulaymān, the lion of faith controlling the jinn, represented by the dragons to either side.[131] His work describes and depicts one figure of a life-sized sculpture of a youth, a mechanical servant bearing a water ewer (Figure 2). The water flows from the breast of the figure into the jug held in its right hand along pipes inside the outstretched arm; when the bird on top of the ewer sings, the water is poured and the left hand, holding a towel and mirror is lowered. When the towel and mirror are taken from the moving statue, the arm returns to its original position. Another life-size sculpture of a mechanical servant held a flask in its left hand and filled a cup held in its right, which it then offered to a guest. Another life-size sculpture of a servant figure held a glass in its right hand, filled with wine from the mouth of the fish held in the left hand. When the glass was full, the right arm extended the filled glass to the guest to take and drink.

Like the automatic boat designed by Abū l-'Izz al-Jazarī[132] (Figure 3), in the "Tale of the Third Kalendar" in *The Thousand Nights and One Night*, an automata is described rowing a boat,[133] but this boat contained a single powerful sculptural automata figure:

> In a few moments I saw a boat coming to me out of the sea, at the sight of which I secretly thanked Allah. In it was a man of brass bearing on his

[128] Nasr, *Islamic Science*, p. 147, n. 29.
[129] Nasr, *Islamic Science*, p. 145, n. 27.
[130] A development of the pleasure boats built in the shape of a lion, an eagle and a dolphin to sail on the Tigris for the 'Abbāsid Caliph Abū Mūsā l-Amīn (193–197/809–813).
[131] Similar to the protective relief on the Talisman Gate at Baghdad of 618/1221, built by order of the Caliph al-Nāṣir and destroyed in 1335/1917, which probably represented the prophet Sulaymān controlling the jinn, depicted as serpents, one held fast in each hand.
[132] Istanbul TSM, Kitablığı, Ahmet III, 3472, 98b; Öney, *Anadolu Seluklu Mimari*, res. 124.
[133] Mathers, trans., *The Thousand Nights and One Night*, I:91, 14th Night. Husain Haddawy's translation reads: "When the skiff came up to me, I saw there a man of brass, bearing on his breast a lead tablet inscribed with names and talismans" Haddawy, *Arabian Nights*, p. 116.

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Figure 2. Technical drawing from Badī‘ al-Zamān Ismā‘īl b. Razzāz Abū l-‘Izz al-Jazarī’s c. 602/1206 manuscript illustrating an automata statue of a youth who pours water as required from the jug held in his right hand (from Tekeli, Dosay and Unat, *El-Cami Beyne’l-‘ilm ve’l-‘Amel*, plate 1.36).

> breast a plate of lead graven with names and talismans. Without a word I climbed aboard, and the man of brass rowed me for one, for two, for three, for ten whole days . . .

It seems the description of “a plate of lead graven with names and talismans” on a figure, or the description of object or figure as made “of brass”, served to alert the eighth/fourteenth-century or earlier Muslim audience[134] to the fact that a sculptural automata was being described, as with the “man of brass” in this

[134] There is an eighth/fourteenth-century Syrian manuscript of the Thousand Nights and One Night, by Muḥsin Mahdī, used by Haddawy for his translation.

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Figure 3. Technical drawing from a 714/1315 Syrian copy of Badī‘ al-Zamān Ismā‘īl b. Razzāz Abū l-‘Izz al-Jazarī’s c. 602/1206 manuscript illustrating an automata of a mechanical boat (from Atıl, *Art of the Arab World*, Cat. No.47).

tale, in the “brass rider” in the “Tale of the Third Kalendar” and in the “Tale of the Mysterious City of Brass”, with its sculptural automata.

In his seventh/thirteenth-century treatise entitled *Kashf al-asrār*, “The Unveiling of Secrets”, written for an Iraqi Prince, al-Jawbari explains how the sword-wielding arms of statue-automata are activated by tubes of mercury attached to trip wires.[135] This passage indicates one of the techniques employed to activate the sword arm of a life-size sword-wielding statue of brass, such as seem to have been made in the sixth–seventh/twelfth–thirteenth century as court sculptural automata, as is indicated by other references, including the sword wielding “black ghulam” that each hour during the night extinguished a candle, in a clock sculptural automata designed by al-Jazarī.[136] A version of these clothed sculptural automata is mention in the *Book of The Thousand Nights and a Night*, in the “Tale of the Mysterious City of Brass”;[137] there are armed slaves (sculptural automata) by the bed of the princess. And they are also described in the “Tale of King Umar al-Numan”:

> He (Prince Sharkan) saw a great hall carpeted with silk rugs of Khurasan and lighted by high windows giving upon leafy gardens and pleasant springs. Against the walls were ranged figures, dressed as if they were alive,

[135] Irwin, *Arabian Nights*, p. 188.
[136] E. Atıl, *Art of the Arab World* [Exh. Cat.] (Washington, DC: Freer Gallery, 1975), No. 46, p. 105.
[137] Mathers, trans., *The Thousand Nights and One Night*, II:302–303, 345th and 346th Nights.

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> which moved their arms and legs astonishingly, and spoke and sang by some concealed device.[138]

The response of a viewer of these speaking, moving and singing, life-size sculptural automata in a palace audience hall was—unsurprisingly—one of amazement.

There is one later reference and one possible contemporary reference to palace sculptural automata in Rum Seljuk seventh/thirteenth-century Anatolia, the confirmation of a body of indications that suggest that Rum Seljuk sultans, frequently described as "the Second Sulaymān",[139] like other powerful and related rulers,[140] had sculpted automata in their palaces, with probable representations of these automata-figures on the palace eight pointed star tile revetments. Some of these palace tiles may represent a type of the famous caliphal palm tree with bird automata in the *dār al-shajara* (Figure 1). Jalāl al-Dīn Rūmī (d. 671/1273) uses the term, "The palm tree of the Caliphate",[141] and this may in part refer to the famous palm tree automata. There may have been a related sculptural automata erected in a Rum Seljuk palace, as he also refers to a wax palm tree and to wax birds,[142] possibly employed in casting a copy of palm tree with bird automata. These seventh/thirteenth-century Rum Seljuk palace tiles also clearly depict the four armies of the prophet Sulaymān:[143] *jinn* of the land and of the air (Figures 4, 6), men—simulacra slaves of the ruler automata (Figure 5), like those recorded by al-Jazarī (Figure 2), and of various birds and animals. Further, given the similarity of the human-headed jinn on these Rum Seljuk palace tiles to those depicted on f. 121 of the "Schefer Hariri" of 633/1236, painted in Baghdad by al-Wāsiṭī[144] (Figure 7), it seems probable that the caliphal palace in Baghdad may have had

[138] Mathers, trans., *The Thousand Nights and One Night*, I:362, 49th Night. The storyteller located these clothed, sculptural automata in the hall of a monastery in the territory of the Byzantine ruler Hardud of Ceserea (Kayseri), close to the Byzantine-Muslim border in S.E. Anatolia.

[139] Ibn Bibi, El-Hüseyin b. Muhammed b. Ali El-Ca'feri Er-Rugadi, M. Öztürk (çev.), El Evamiru'l-Ale'iye fi'L-Umuri'l-Ala'iye (Selçukname) (Ankara: Türk Tarih Kurumu, 1996), c.1, pp. 232; 238, fn. 594, where the Rum Seljuk Sultan Alaed-Din Keykubat I is described as "a second Sulaymān", sitting on his four cushions on his throne, and his vizier as a second Assāf (ibn Barkhiya), to receive the envoy from the 'Abbāsid caliph. Ibn Bībī also describes the Rum Seljuk Sultans Kılıç Arslan II, Giyathsed-Din Keyhusrev I and Izzed-Din Keykavas I as like the prophet Süleyman (Ibn Bibi c. 1, 79, 89–90, 181), and Sultan Giyathsed-Din Kethusrev II and his wife as like "Belkis" the Queen of Sheba. Ibn Bibi equates the arrival of the Seljuk household to the wind of the prophet Sulaymān, as in Q 21.81 and Q 38.36, doubtless in part because the founder of the dynasty in Anatolia was Sulaymān ibn Kutlumush. There was also Sultan Rukn al-Dīn Sulaynān II, "the second Sulaymān" (Ibn Bibi, c. 1, 20). For a seventh/thirteenth-century commentary on Solomon and Bilkis/Belkis, see the chapter on Solomon in Muḥyī al-Dīn b. al-'Arabī's *Fuṣūṣ al-ḥikam*, written in Damascus in 626/1229 (*Wisdom of the Prophets (Fusus al-Hikam)*, trans. T. Burckhardt [Arabic to French] and A. Culme-Seymour [French to English] (Aldsworth, UK: Beshara, 1975), pp. 83–95). See also W.C. Chittick, *The Sufi Path of Love: The Spiritual Teachings of Rumi* (Albany: State University of New York, 1983), 1373; 1747, from Jelal ad-Din Rumi's Divan-i Shams-i Tabrizi: "Today I am Asaf Solomon's vizier, sword and firman in hand—I will break the neck of any who are arrogant before the king" and, "Love has made me Solomon and my tongue Asaf—how should I be tied to all these remedies and incantations?"

[140] Sultan Alaed-Din Keykubat I for example was related to the Ayyubids through marriage in 623/1226 to Gaziye Hatun.

[141] Mathnavi 1982, Bk. 1, 3947, as also to "the palm tree of Paradise", Mathnavi 1982, Bk. 4, v. 1771 & 3509; as also to the palm tree as a sign of generosity, Mathnavi 1982, Bk. 5, v. 810 & 1189-90.

[142] Arberry, *Discourses of Rumi*, p. 117 and Mathnavi Bk.5. v. 419.

[143] Duggan, "Motifs", pp. 206–208.

[144] Bib.Nat. Paris, MS Arabe 5847.

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Figure 4. Eight-pointed Rum Seljuk star tile in lustre technique from the Palace of Kubadabad, largely completed by 633/1236, by Lake Beyşehir, Turkey, of a "*jinn* of the land", probably recording the appearance of a Rum Seljuk palace automata of a *jinn* of the land (from Roxburgh, ed., *Turks*).

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jinn automata of this type, the caliphal example providing the legitimising model for Rum Seljuk, as for other Islamic rulers', sculptural automata. The later reference to Seljuk automata was made in the eleventh/seventeenth century by Evliya Çelibi, who relates that the entrance gateway to the White Palace at Ak Seray (Aksaray), built by Sultan 'Izzed-Din Kaykavas I (607–615/1211–1219) b. Kılıç Arslan II, had on either side of it sculptures of lions that "gave off a roaring sound",[145] probably generated in the same manner as the "roaring sound", recorded by Glykas, of the lions by the East Roman emperor's throne, constructed by the engineer Leo the mathematician 173–c.255/790–c.869. This "roaring sound" was also recorded by Luidprand in relation to the lions by the emperor's throne in the palace in Constantinople in 337/949, as was probably also the case for the sculptured automata lions by the 'Abbāsid caliph's throne in Baghdad and Samarra. Although outside the palace and so presumably made of stone rather

[145] Bates, Bates, "Evliya Çelibi's comments", p. 259.

Figure 5. Underglaze eight-pointed star tile from the Palace of Kubadabad, largely completed by 633/1236, by Lake Beyşehir, Turkey, depicting a servant-possibly recording a servant automata (from Roxburgh, ed., *Turks*).

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than sheet metal, these lions at the entrance to the White Palace incorporated part of the technology common to the palace sculptural automata, suggesting the Rum Seljuks had palace automata, like the adjacent Ayyūbid, Artukid and East Roman rulers, for these stone lions "spoke". They may even have moved, as Jalāl al-Dīn Rūmī's *Mathnevi* may be referring to these same speaking stone lions at Ak Saray:: "He felt at the moment when he became rapt (in devotion) and bewildered, that the stone spoke and made signs. When the wretched man bestowed his devotion in the wrong place and deemed the lion of stone to be a (real) lion".[146] Rumi was drawing a distinction between a figure that moved and appeared to speak but was without a soul, and the Real, the lion mentioned in the Qur'ān (74:50), where the unbelievers are described as behaving like frightened asses, fleeing from the lion of Prophetic revelation, the distinction being between the Real and the illusion of the apparently real, the veils of illusions of the world and worlds extending beyond the seven heavens. The Qur'ān makes the same point concerning Belkis' encounter with the prophet Sulaymān. It seems most probable that some of the formerly metal-lined holes in the mouths of seventh/thirteenth-century Rum Seljuk stone sculptures of various forms, including stone lions and human-headed birds, were for the production of sounds. These tubes were not

[146] Mathnavi 1982, Bk. IV, v. 911–12.

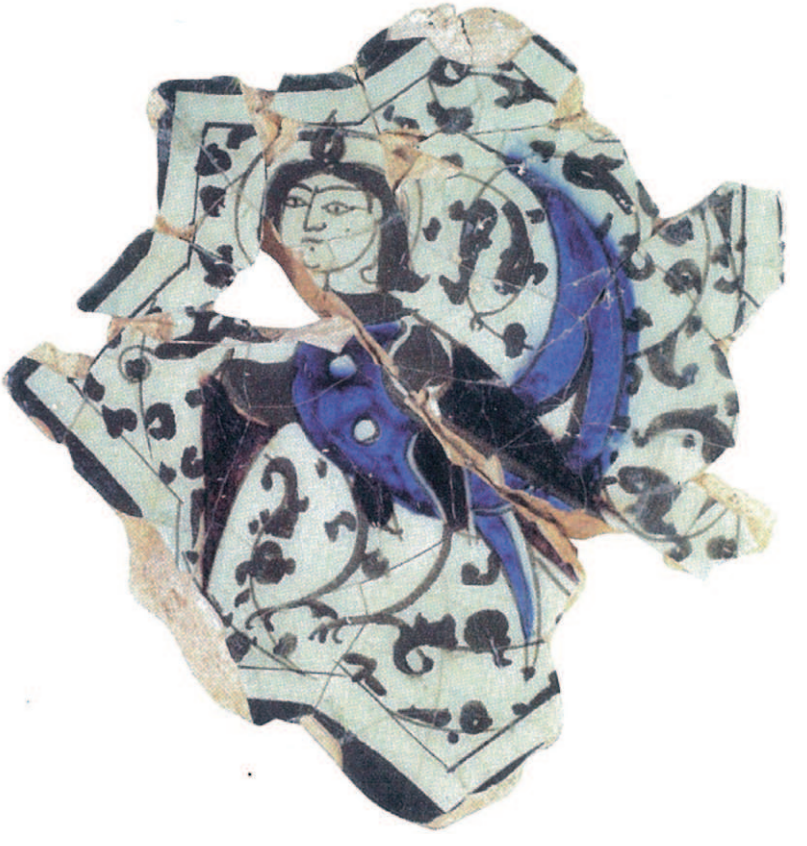

Figure 6. Underglaze eight-pointed star tile from the Palace of Kubadabad, largely completed by 633/1236, by Lake Beyşehir, Turkey, of a "*jinn* of the air", probably recording the form of a palace automata-sculpture in the form of a *jinn* of the air (From R. Arık, *Kubad Abad* (Istanbul: Bankası Yay, 2000).

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just to jet water into pools, but to make stone sculptures speak, as was probably also the case for some of the no longer extant metal, dressed, enamelled and bejewelled sculptural automata in Rum Seljuk palaces. The water supply to Rum Seljuk, as to other Islamic palaces served not just to fill the fountains, cisterns and pools but also permitted some of the sculptural automata in these palaces to speak.

The accounts of a speaking head of Baphomet in the possession of the Knights Templar,[147] reported by various witness at their trial in 706–710/1307–1311, would seem to refer to a speaking automata, perhaps a gift from an *amīr* or ruler to a Master of the Order of the Temple, given its name, and so it would have been made by a Muslim court engineer. This was a speaking head sculptural automata that some Templars seem to have come into contact with, and which was suspected or alleged to have served some ritual function in Templar practice. A trace perhaps

[147] Barber, *Trial of the Templars*, p. 183: "the idol in the form of a head, which according to these witnesses had up to four faces, was also described by one Templar as having two small horns *and possessing the ability to reply to questions put to it*".

Figure 7. Detail from f. 121 of the "Schefer Hariri" of 633/1236, painted in Baghdad by al-Wāsiṭī, Bib.Nat. Paris, MS Arabe 5847 (from P.J. Müller, *Arabische Minaturen* (Genf: Weber, 1979) showing a human-headed lion, "a *jinn* of the land", and the human-headed bird, "a *jinn* of the air", both it is suggested, recording the appearance of palace automata-sculptures in the form of jinn.

of some speaking head sculptural automata also occurs in the "Tale of the Wazir of King Yunan and Rayyan the Doctor", related on the 5th Night of *The Thousand Nights and One Night*.[148]

[148] "Indeed a book that is the extract of extracts, the rarities of rarities of science, and I would offer it to you that you might keep it forever amongst your chests of books... It holds devices that are above price, the least of its secrets being this: if, when my head is (cut) off, you turn three pages of the book, then read three lines on the left-hand page, my severed head will speak and answer any manner of question... Doctor, is this true? Even if I cut your head off will you speak? Indeed it is true my king, he answered, It is one of the prodigies of my science...Take this book, my King, but do not use it until you have cut off my head. When my head is off, set it upon this plate and have it pressed down firm upon the powder to stop the bleeding. After that open the book" Mathers, trans., *The Thousand Nights and One Night*, I:34. The idea of the book with poisoned pages was later employed by Umberto Eco in *The Name of the Rose* (New York: Harcourt, 1980).

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Zakariyya l-Qazwīnī (604–681/1208–1283) reports in his *Āthār al-bilād wa akhbār al-ʿibād*, that, "in the lighthouse of Constantinople there is a horologium which is made up of 12 doors, each representing an hour. At every hour, one of the doors opens and a statue comes out . . . The Byzantines say it is the work of the wise Binas".[149] The Pharos tower was located on the sea walls of the palace and seems to have kept its automata even after the sack of 600/1204, if al-Qazwīnī was not reporting on what once was but now was no more. The Latin Robert de Clari, in his account of the 600/1204 Latin Crusaders sack of Constantinople, seems to have been aware of classical East Roman (Byzantine) automata, as he writes, "And the hippodrome with its wealth of statues, which (Clari assures us) of old moved by magic, but which nowadays never work".[150] These statues-automata were melted down by the Catholic Crusaders. Interestingly the Orthodox Christians are not charged with worshipping these automata, perhaps because they are said no longer to work; it was asserted by Catholic authors that Islamic automata were in fact idols that were worshipped by Muslims.

A further indication of the importance attached to these sculptural automata is provided in *The Thousand Nights and One Night*, in "The Magic Tale of the Ebony Horse":

> The king, who had a great love of science, geometry and astronomy, was seated on his throne when three wise men presented themselves before him, *masters of secret knowledge and hidden arts, who could mould the images of things with a perfection which confounded the beholder and were deeply versed in those mysteries of which ordinary folk know nothing.*

One of the wise men was from India, another possibly from Anatolia, a *Rūmī*, and the third, a Persian. Each offered the ruler different sculptural automata in exchange for the hand of one of the ruler's three daughters, indicating the value of moving speaking sculptural automata at court—like the 2,000 pounds of gold offered by the Caliph al-Ma'mūn for Leo the engineer. The first offered,

> a man of gold incrusted with rare diamonds, who held a golden trumpet in his hand . . . If you set him up at the gate of your city he will be a sleepless guardian of it; for, if an enemy approaches, he will divine him from far and, raising the trumpet to his lips, blow a blast which shall paralyse your foe with fear and kill him with terror.

The second offered,

> a vast silver basin, in which was a gold peacock surrounded by twenty-four gold peahens . . . each time that an hour passes of the day or night, the peacock pecks one of the twenty-four peahens and mounts her, with a great

[149] N.M. El-Cheikh, "Byzantium through the Islamic prism from the twelfth to the thirteenth centuries", in *The Crusades from the Perspective of Byzantium and the Muslims*, ed. A. E. Laiou and R.P. Mottahedeh (Washington, DC: Dumbarton Oaks, 2001), pp. 53-69, at p. 65. The "Binas" referred to is most unlikely to have been Apollonius of Tyana, a wandering holy man of the first century AD and not a known engineer. It is perhaps a garbled reference to Philon of Byzantium's work on water clocks.
[150] Robert De Clari, İstanbul'un Zapti (1204), çev. B. Akyavaş, Türk Tarih Kurumu, 1994), XC, 45.

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> beating of his wings, thus marking the hours until all the females have been mounted. Further than that, when the month had passed, he will open his mouth and the crescent of the new moon will appear in his throat.

The third offered the ruler,

> a horse made from the blackest and rarest ebony, inlaid with gold and diamonds, and bearing a saddle, bridle and stirrups such as are not seen even upon the horses of kings . . . it carries its rider through the air with the speed of light, taking him wheresoever he would go and covering in a day a year's journey of a horse of flesh and blood . . . Do you see that gold peg on the right of the pommel? That is the mechanism of ascent; you have but to turn it.[151]

A type of the first automata figure can be seen in al-Jazarī's miniature of the water-clock with drummers and trumpeters,[152] which also hints, in its protective function, at the horseman on the Green Dome. The second offers a spiced-up reworking of the sixth/twelfth-century Damascus Jayrun Gate figural clock automata by Muḥammad al-Sā'ātī with, instead of the balls dropping from each of the falcons beaks, the crescent moon appearing in the mouth of the peacock at the appearance of each new moon. However, the third offering, although perhaps hinting at the 30 life-sized mounted horsemen automata in the hall of the tree, *dār al-shajara*, in Baghdad in 278/892, and the twisting of pins to activate some automata, seems different; it may in part relate to the horse that was kept saddled every night at various town gates,[153] ready for the return of al-Mahdī, the Expected or Hidden Imām, due to appear towards the end of the world.

The Latin record of contact with these marvels

Excluding clock automata, it was largely envoys, as in Luitpand's astonished encounter with the roaring lions and elevating imperial throne, who came into contact with these moving statues and for whom they sprang into movement and voice, and who, in rare cases, recorded them. However, the majority of envoys, regrettably for us and our perception of Islamic figural sculpture, did not record what they saw for the simple reason that what they saw was quite unbelievable, so incredible that if they had recounted what they had seen upon their return to less civilized, less urbane circumstances, they would have been entirely discredited for having been ensorcelled, enchanted and deceived. Facing a dangerous and sceptical audience confident in its ignorance, they would have been accused of telling lies or imagining things, and would have met with a response such as that given by an

[151] Mathers, trans., *The Thousand Nights and One Night*, II:460–461.
[152] Atıl, *Art of the Arab World*, Cat. No. 45, 104.
[153] For example, at Hilla in Iraq in 727/1327, Ibn Baṭṭūṭa records the daily sunset procession of 100 of the townsmen, with arms and drawn swords, to the governor of the city to receive a saddled and bridled horse or mule, which they then escorted to the sanctuary of the Master of the Age, the mosque where Muḥammad, the twelfth imām of the Twelver Shī'ites, the son of al-Ḥasan al-'Askarī had entered and then disappeared, "for he, in their view, is the 'Expected Imam', the Hidden Imam" (H.A.R. Gibb, *Ibn Battuta*, pp. 98–99).

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Italian eighth/fourteenth-century audience to Marco Polo's limited account of his observations recorded in his travels in distant lands, some ruled by Muslims, so different from the world the Latins inhabited that they called his book of observations, "a million lies". When he was on his deathbed, the Dominican Jacopo d'Acqui related, "Because there are many great and strange things in his book, which are reckoned past all credence, he was asked by his friends to correct it by removing everything that went beyond the facts. To which his reply was that he had not told one half of what he had actually seen!"[154] The cultural, artistic and technological gulf was so vast that to give an accurate written account of these palace automata would have demanded quite unobtainable levels of credulity and a most rare degree of trust in the envoy's veracity on the part of the recipients, whether readers or hearers of any dispatch or record made of what an envoy had seen with his own two eyes in the caliph, sultan or amīr's audience hall.

However, it was almost certainly some contact at Muslim courts with these moving speaking sculptures, automata of both human and animal form, that gave rise to the Latin Christian allegations of Muslim idol worship, supposed worship of the trinity of gods "Mahom, Apollin and Tervagant", a subject that is repeatedly referred to from the period of the early Crusades onwards in Western European literature, in the late fifth/eleventh century, the later *Chansons de Geste* and other[155] and later Latin romances into the ninth/fifteenth century. "In the adventure story *Simon de Pouille*, the 'idols' are activated by a man inside. The priest Goras enters (these 'idols') one after another, as the hero breaks them up in turn. Usually, when these images are described, they are richly covered in jewels".[156] This repeated Latin assertion that these moving statues were inhabited by people and were worshipped by Muslims was of course entirely without foundation. There is no indication that any of these works clothed living people, nor were they made as objects for worship or idols—a false assumption and allegation made by the Latins as a result of their ignorance of courts and court practices in both Islamic and East Roman courts for centuries. The fact that a work of *'ajā'ib*, a marvel, a wonder, a moving, speaking statue, was described by the Western observer or reporter as an idol only reveals the ignorance of the Latin Christians during these centuries. These works were not in any way intended to rival or imitate the creative act of the Almighty,[157] a self-evident impossibility. Except for the fact there was no

[154] J. Larner, *Marco Polo and the Discovery of the World* (New Haven. CT: Yale University Press, 1999), p. 45.

[155] E.g., in the elements of the marvellous in Wolfram's Parzival. This same idea may have some relationship to the description of the deity said to have been worshipped by Muḥammad contained in the widespread third/ninth-century Orthodox Christian "Formula of Abjuration", which records, "...God made of solid hammer-beaten metal..." (C.L. Hanson, "Manuel I Comnenus and the 'God of Muhammad': A study in Byzantine ecclesiastical politics", in *Medieval Christian Perceptions of Islam*, ed. J.V. Tolan (London: Routledge, 2000), pp. 55–82, at p. 55, a mistranslation made by Nicetas of Byzantium and current into the sixth/twelfth century that the word *ṣamad* in Q 112:2 meant, "hammered together" (ibid. 63–64).

[156] N. Daniel, *The Arabs and Medieval Europe*, 2nd ed. (London: Longmans, 1979), pp. 238–239, and references provided in the notes to these pages.

[157] The distinction between man's forming an object and the Almighty's creative actions is clearly stated in the Qur'ān (5:110), where the Prophet 'Īsā (Jesus) shapes a bird from clay, but it flies when the Spirit is breathed into it, clearly distinguishing between the Almighty, who both forms and gives Spirit, as in the Creation and the making of Adam, and a simple forming from clay. Jelal al-Din Rumi similarly remarks on this distinction (Mathavi 1982, Bk. 1, v. 1020): "The painting on the wall is like Adam; see from that (pictured) form what is wanting"; that which is lacking being the Spirit as distinct from the

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man inside them, which, if it were known, would have made these figures even more frightening and inexplicable to a sixth/twelfth- or seventh/thirteenth-century Latin observer, who would then have seen them as the result of magic, not of soulless technology, these short references preserve some brief record of Islamic court automata, of moving speaking statues. However, an Occidental's familiarity with the thinking that underlay the technology and devices at Islamic palaces and courts might have resulted in the charge of necromancy being levelled at that person.[158] These allegations were made against Gerbert, the Archbishop of Ravenna and teacher of the Emperor Otto III before being elected Pope as Silvester II (389–393/999–1003) due to the time he spent in Catalonia studying mathematics and astronomy,[159] acquiring his knowledge of Arabic numerals and wisdom. Later this same charge was levelled against Roger Bacon (c.606–693/1210–1294) amongst others, for his knowledge of and use of Muslim works, for otherwise incomprehensible wonders must, in the view of the then relatively technologically ignorant Latin West, be the work of necromancy, conducted with the aid of devilish forces.[160]

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Conclusions

The record presented above would seem to suggest, first, that the idea that the Islamic world had no significant tradition of free standing figural sculpture seems to be an entirely ill-founded opinion, foisted upon an uninformed public by the Western scholarly community for a number of reasons[161] over the past more than 150 years, and subsequently repeatedly echoed in the Islamic world, for a number

(*footnote continued*)
ṣūra, "form". Consequently, it seems to this author that those who assert that sculptors, engineers or painters were or are in their activities competing with, or imitating, the actions of the Creator, thereby exhibit a lack of discrimination between a form infused with the Spirit and an empty material form which may be mobile, and, as such, these accusers would seem to be guilty of s*hirk*, that is of associating partners, forms, with the Divine—that is to have confused the Real with that which is conditional upon it.

[158] J. Farrow, *Pageant of the Popes* (London: Sheed & Ward, 1943), pp. 100–103. Gerbert was an advocate of the Crusades before the demolition of the Holy Sepulchre by the reportedly mad Fāṭimid Shī'ite Caliph al-Ḥākim (385–411/996–1021) in 399/1009.

[159] A. Chejne, "The role of Al-Andalus in the movement of ideas between Islam and the West", in *Islam and the Medieval West: Aspects of Intercultural Relations*, ed. K.I. Semann (Albany: State University of New York Press, 1980), pp. 110–133.

[160] The charge of necromancy was still being levelled against him 300 years after his death (D. Knowles, *Saints and Scholars: Twenty-five Medieval Portraits* (Cambridge: Cambridge University Press, 1962), p. 105.

[161] Including: the physical loss of these sculptural automata, although the record of them exists and was known in the thirteenth/nineteenth century; a certain lack of historical imagination and an unwillingness give credit to the "other", to the colonized Muslims, for their development of sculptural automata, of robots; a refusal to allow the results of excavations in palace complexes alter long established ideas on this matter; and the concentration, in the thirteenth/nineteenth and early fourteenth/twentieth centuries, on the translation and investigation of *ḥadīth* and other religious texts, which for obvious reasons make only slight reference to palace sculptures or automata, although the key texts for these marvellous sculptures are in the Qur'ān and the sources that relate to the prophet Sulaymān, the jinn and the making of statues and other wonders, and the commentaries upon them.

of reasons, some different.[162] It is rather the case that the Islamic world had a widespread and longstanding tradition of figural sculpture, often of life-size figures,[163] some made of stucco and painted in lifelike colours.[164] But there were also other more valued and valuable sculptures, sculptures that moved and sometimes spoke, in a sculptural tradition that extended over the course of more than 500 years, and which, like East Roman sculpture and sculptural automata, was built in part upon earlier models and technology, modified and improved upon. With the exception of clock automata and the moving lancer figure positioned in elevated locations, sculptural automata were largely confined to palaces and courts and did not, for sound theological reasons (lest the sin of idolatry be induced), extend into explicitly religious contexts or spread far into the wider community, who might well have been distracted from belief by these wonders, as was the case with the "wretched man" mentioned by Jalāl al-Dīn Rūmī.[165] Islamic sculpture, including these moving, speaking statue-automata, was largely confined to palaces and was employed for particular reasons of state connected to the expression of the power of "the second Sulaymān", that is the caliph or other ruler, and his ability, in the controlled environment of his palace, to shock and awe the envoy or guest, if he so desired, with the lifelike sculptures produced by the wonderworking jinn,

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[162] In part due to the success, following the destruction wrought by the seventh/thirteenth-century Mongol invasions, of the Ḥanbalite, Wahhābī and related strands of Islam in influencing public opinion, both in the Islamic world and beyond, with its understandable if simplistic and seemingly ignorant confusion of the making of images and statues with idols and with the practice of idolatry. The Qur'ān is explicit in this matter: idolatry is forbidden to Muslims. Statues, moving or otherwise, and pictures of various forms and types are neither forbidden nor required, but are of course not necessarily *ḥarām*, unless they are worshipped and so become idols. The figural works of sculpture referred to in this article were employed by believing, upright Muslims for centuries in Islamic courts and palaces, not primarily in the wider community where they would have been exposed to the accusations of the ignorant. See for example: A.M. Issa, *Painting in Islam: Between Prohibition and Aversion* (İstanbul: Waqf for Research on Islamic History Art and Culture, 1996); Arnold, *Painting in Islam*, pp. 1–40; T.M.P. Duggan, "A 13th century profile portrait seal depicting the face of the Rum Seljuk Sultan Alaed-Din Keykubat I (1220–37)", *Adalya* 10 (2007): 309–351, n. 127.

[163] Figurative works of sculpture in the round, as in relief, and painted were made from the start of early Islam, as the surviving evidence from Omayyad palaces shows, including the life size, painted stucco slave girl/concubines from Kirbat al–Mafjar, sculptural precursors of al-Afḍal's sculptural automata (cf. R. Ettinghausen, M. Jenkins-Madina and O. Graber, *The Art and Architecture of Islam, 650–1250* (New Haven, CT: Yale University Press, 1994), pp. 56–71, Figs 28, 30, 31; *Islam: Art and Architecture*, ed. M. Hattstein and P. Delius (Cologne: Konemann, 2000), pp. 81–87). Sculpture in the round, as well as in relief, and sculptural automata were a common feature of palace culture under the 'Abbasids and Tulunids (see above), as this is also indicated by the examples of statues found in excavations at Ghaznavid palaces, and in the reuse of ancient statues, possibly modified with stucco work, such as the Hercules built into the Seljuk walls of Konya (Irwin, *Islamic Art*, 1997), p. 211), and the ancient sculpture of a lion built into the Seljuk walls of Hamadan, reportedly made by the prophet Sulaymān and having a talismanic function, as Ibn al-Faqīh relates. For examples of life size sculptures of Muẓaffar al-Dīn b. Nāṣir al-Dīn Shāh (1313–1324/1896–1907), erected within both mosques and shrines in 1920's Shi'ite Persia, see A.U. Pope, *An Introduction to Persian Art since the Seventh Century AD* (London: Davis, 1930), pp. 227–228.

[164] First made widely known by R.M. Riefstahl's, "Persian Islamic stucco sculpture", *The Art Bulletin*, 13 (1931): Plates, 514ff.; also, T.T. Rice, "Some reflections aroused by four Seljukid stucco statues", *Anatolica*, 2 (1968): 112–121; O. Aslanapa, *Türk Sanatı* (İstanbul: Remzi Yay, 1989), pp. 309–311; Oya Pancaroğlu, "The Seljuks of Iran and their successors", in *Turks: A Journey of a Thousand Years 600–1600*, ed. D.J. Roxburgh [Exh. Cat.] (London: Royal Academy of Arts, 2005), pp. 70–100, Nos. 39, 41.

[165] Op. cit fn. 147.

the engineer-craftsmen, and these moving speaking statues representing the jinn and the other armies of the prophet Sulaymān, that lay at the ruler's command.

Second, there can be no doubt, when these astonishing works of Islamic sculpture are placed in the balance, that at the time of the Crusades the art of sculpture in the Islamic Near East was far in advance of Western concepts of sculpture—so far in advance that these sculptures were referred to as "idols that moved and spoke" by the few Latin Franks who came in contact with them or obtained reports about them. The visiting Western Latin envoy or visitor who experienced the full force of the life-sized dressed and bejewelled sculptures that moved and spoke at Islamic courts, knew beyond any shadow of doubt which civilization made the more impressive figural sculpture and subconsciously knew which civilization had continued and improved upon the arts and artifices of the ancients in the intervening centuries: it was the civilization of Islam and also of Orthodox Christianity. The wonder-workers, the "jinn", and the works that they produced, these man-made marvels, these palace robots, were not originally in or of the Occident. They were not an organic part of Latin European culture, and contact and rumour concerning them may have helped to form the Occidental attitude towards Islam and the Islamic world, including repeated references to the "other" as possessing "idols that moved and spoke", and elements of the exotic, of the wonders of the east, of the Orient, established in the Latin mind when the Latin West encountered the civilizations of the Orient in Andalusia, Sicily, Syria-Palestine, Constantinople and Rum Seljuk Anatolia in the fifth/eleventh–seventh/thirteenth centuries, when they met face to face with the inheritors, modifiers and developers of the arts, sciences and technologies of antiquity, and where a few experienced at first hand these moving, speaking statues.

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